'LOVERS AND MADMEN HAVE SUCH SEETHING BRAINS': HISTORICAL ASPECTS OF NEUROSYPHILIS IN FOUR SCOTTISH ASYLUMS, c.1880-1930

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SUBMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY, UNIVERSITY OF EDINBURGH

2001

Lovers and madmen have such seething brains
W. Shakespeare, *A Midsummer Night's Dream*

And most of all would I flee from the cruel madness of love,
The honey of poison-flowers and all the measureless ill
A. Tennyson, *Maud*

Formerly, when religion was strong and science weak,
men mistook magic for medicine;
now, when science is strong and religion weak,
men mistake medicine for magic.
T. Szasz, *The Second Sin*

We have learned very little that is new about the disease,
but much that is old about ourselves.
F. Tilney, M.D.,
on the polio epidemic of 1916, New York

DECLARATION

This thesis has been composed entirely by myself,
and the research on which it is based is my own.

Gayle L. Davis

Abstract

This thesis analyses a sample of clinical records of four Scottish asylums, two in Edinburgh and two in Glasgow, in order to study processes of diagnosis and treatment in neurosyphilitic patients *circa* 1880 to 1930. During this period, *Treponema pallidum*, the spirochaete responsible for syphilis, was discovered. Moreover, the Wassermann reaction to identify syphilitics from blood and cerebro-spinal fluid samples was developed. This test became central to the scientific investigation of the insane, and was increasingly portrayed as psychiatry's most potent symbol of the emerging era of laboratory medicine. Numerous heroic therapies to treat neurosyphilitic disorders were also tried, including malarial therapy. Therefore in terms of diagnosis and treatment, this period is crucial in the historical development of the relationship between syphilis, psychiatry and medicine. Neurosyphilis is a generic term for all forms of insanity now known to be caused by the syphilitic spirochaete. However alienists, particularly those working in Scotland, responded in complex ways to spirochaete-based reclassifications of forms of insanity such as General Paralysis of the Insane, which was diagnosed in an estimated twenty percent of late nineteenth-century male asylum admissions. This theme is explored by comparing the empirical case note sample findings with the published and unpublished views of Scottish asylum medical superintendents. It is argued that men such as Thomas Clouston, David Yellowlees and George Robertson assimilated new spirochaete-based aetiologies into pre-existing multifactorial concepts of GPI, which related the disease to the influences of degeneration and urbanisation, 'fast living' and 'excess'. It is argued that their informed medical opinions simultaneously expressed and were also an expression of, wider social, moral and political concerns. The thesis draws upon a broadly social constructionist perspective to illuminate the historical connections between the clinical, pathological and social aspects of neurosyphilitic disorders over the period of study.

Acknowledgements

You might not be surprised to hear how much interest you receive when your topic of research is sex and madness. Nevertheless, I am incredibly lucky to have received so much advice and sheer enthusiasm on many aspects of this thesis. I must firstly thank the Economic and Social Research Council for funding the research; and Helen Zealley and Harry Burns for allowing me access to the clinical records of the Edinburgh and Glasgow institutions respectively.

The following have all generously shared with me their valuable time and expertise at various stages of my research: Mike Anderson, Helen Coyle, Anne Kerr, Bob Morris, Martin Rorke, and Steve Sturdy of the University of Edinburgh; Anne Crowther, Marguerite Dupree, Matt Egan, Frank Rice, and Donald Spaeth of the University of Glasgow; Jonathan Andrews and Kerry Davies, Oxford Brookes University; Juliet Hurn, formerly of University College, London; Sharon Mathews, Centre for the History of Science, Technology and Medicine, University of Manchester; Emma Halliday, University of Stirling; Susan Lemar, University of Adelaide, Australia; Iain Smith, Gartnavel Royal Hospital; Dale Garbutt, Rosslynlee Hospital; Dugald Gardner, Royal College of Surgeons, Edinburgh; Jeanne Bell and Alex Gordon, Western General Hospital, Edinburgh; Colin Smith, Clinical Professor of Psychiatry, Saskatchewan, Canada. I am especially indebted to Malcolm Nicolson of the Glasgow Wellcome Unit for his long-term support and many constructive criticisms of this project.

I am grateful to the staffs of Edinburgh and Glasgow University Library Special Collections, the Mitchell Library, the National Archives of Scotland, the National Library of Scotland, the Royal College of Physicians of Edinburgh, Edinburgh Central Library, the Wellcome Library for the History and Understanding of Medicine, and the Public Record Office, for their help and courtesy in assisting my research. More specifically, there are a number of archivists whose help proved invaluable, and whose incredible knowledge of their archives never fails to astound me: Alistair Tough, Karl Magee and George Gardner of the Greater Glasgow Health Board Archive; Julie Hutton, formerly of the Lothian Health Services Archive; Fiona Watson of the Northern Health Services Archive; and Morag Williams of the Crichton Royal Museum, Dumfries. Thanks also to Ian Milne of the Royal College of Physicians of Edinburgh; Sheena Jones of the Royal College of Surgeons of Edinburgh; and James Beaton and Carol Parry of the Royal College of Physicians and Surgeons of Glasgow - the time they gave to my queries is much appreciated.

My greatest thanks are to my long-suffering supervisors: Roger Davidson, Department of Economic & Social History, University of Edinburgh; Mike Barfoot, Special Collections, University of Edinburgh; and Allan Beveridge, Queen Margaret Hospital, Dunfermline. Their expertise, practical help, kindness and friendship have meant more to me than I, a person rarely short of words, can ever say or repay. If my own sanity has remained intact through the completion of this project (and I'm not saying that it has!), it is mostly due to their consistent support, guidance and wonderful humour. I would also like to thank my family and friends for their support and patience. In particular, Steven has been wonderful, knowing as he does so well the highs and lows of writing a PhD. I dedicate the thesis to my

mother and grandparents. Like most historians of psychiatry, I'm not an easy person to live with! And finally, I would like to express my gratitude to all those individuals who have fostered my love of history through their talented and dedicated teaching, especially those who urged me to do something else with my life, thereby fueling my determination to go as far as possible with the discipline.

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CSF	Cerebro-Spinal Fluid
ERM	Entity Relationship Model
LHB	Lothian Health Board
GGHB	Greater Glasgow Health Board
GP	General Paralysis
GPI	General Paralysis of the Insane
HHB	Highland Health Board
HP	Hereditary Propensity
ID	Identifier (Primary Key)
KI	Potassium Iodide
LHSA	Lothian Health Services Archive
MPA	Medico-Psychological Association
MRC	Medical Research Council
NHSA	Northern Health Services Archive
PA	Previous Attack
PRO	Public Record Office
REA	Royal Edinburgh Asylum
'606'	Salvarsan
SWARI	Scottish Western Asylums' Research Institute

Chapter One: Introduction

The Historiographical Context

Historiography of Syphilis

It can be argued that social and political responses to venereal disease, and specifically to syphilis, have revealed basic assumptions and conflicts regarding the nature of sexuality and disease.[1] In recent years, social and medical historians have increasingly interpreted such responses as a function of either social control[2] or moral regulation,[3] both reflecting and reinforcing social relationships of gender, generation, class and race. Much of the historiography surrounding venereal disease has focused on prostitution[4] and the role of gender in the construction and regulation of sexuality.[5] In particular, state policy towards sexually transmitted diseases, especially in wartime, has been viewed as a means of pathologising and regulating female sexuality.[6]

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[1] A. Brandt, 'Sexually Transmitted Diseases', in W. Bynum and R. Porter (eds), *Companion Encyclopedia of the History of Medicine*, volume one (London and New York, Routledge, 1993), p.580. See, also, R. Davidson, *Dangerous Liaisons: A Social History of Venereal Disease in Twentieth-Century Scotland* (Amsterdam, Rodopi, 2001); R. Davidson and L. Hall (eds), *Sex, Sin and Suffering: Venereal Disease and European Society since 1870* (London and New York, Routledge, 2001).

[2] For an introduction to the theory of social control in history and sociology, see S. Cohen and A. Scull (eds), *Social Control and the State* (Oxford, Martin Robertson, 1983). For an analysis of the relationship between sexuality and social control, see F. Mort, *Dangerous Sexualities: Medico-Moral Politics in England since 1830* (London and New York, Routledge and Kegan Paul, 1987).

[3] For the concept of moral regulation, see J. Sangster, 'Incarcerating Bad Girls: The Regulation of Sexuality through the Female Refuges Act in Ontario, 1920-1945', *Journal of the History of Sexuality*, 7:2 (1996), 239-75.

[4] See, especially, M. Spongberg, *Feminizing Venereal Disease: The Body of the Prostitute in Nineteenth-Century Medical Discourse* (London, Macmillan, 1997); J. Walkowitz, *Prostitution and Victorian Society: Women, Class and the State* (Cambridge, Cambridge University Press, 1980); A. Corbin, *Women for Hire: Prostitution and Sexuality in France after 1850* (London, Harvard University Press, 1990).

[5] See, for example, Sangster, 'Incarcerating Bad Girls'; L. Bland, 'In the Name of Protection: The Policing of Women in the First World War', in J. Brophy and C. Smart (eds), *Women-in-Law: Explorations in Law, Family and Sexuality* (London, Routledge and Kegan Paul, 1985), 23-49.

[6] See, for instance, L. Bland '"Guardians of the Race", or "Vampires upon the Nation's Health"?: Female Sexuality and its Regulation in Early Twentieth-Century Britain', in E. Whitelegg *et al* (eds), *The Changing Experience of Women* (Milton Keynes, Open University Press, 1986), 373-88; A. Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States since 1880* (New York and Oxford, Oxford University Press, 1985); L. Bland, '"Cleansing the Portals of Life": The Venereal Disease Campaign in the Early Twentieth Century', in M. Langan and B. Schwartz (eds), *Crises in the British State, 1880-1930* (London, Hutchinson, 1985), 192-208; M. Harrison, 'The British Army and the Problem of Venereal Disease in France and Egypt During the First World War', *Medical History*, 39:2 (1995), 133-58.

Within this framework of analysis, it is argued that the response to syphilis was also used to express generational and class conflicts, encouraging the selective medicalisation of the sexuality of the young and the working classes.[7] Likewise, it has been argued that the history of venereal disease illustrates the role of xenophobic, racial and imperialist concerns within the history of sexuality, with venereal disease stigmatising the sexuality of other races and more generally reinforcing the concept of the *Other*.[8]

Although this literature does not address the social reaction to the tertiary form of syphilis, it has considerable relevance to this study. Firstly, it provides an insight into the complex interaction between medicine, morality, sexuality and venereal disease. The issues of control and moral regulation in relation to sexuality and the medical profession can be extended to the later stages of syphilis. Furthermore, the interpretative frameworks of gender, generation, class and race, employed to interpret more fully the responses to syphilis, will be considered as possible ways to interpret the tertiary form of the disease. Finally, the historiography of syphilis illuminates the relationship between venereal disease and social degeneration, a theme of more direct relevance to this study.

Historians have stressed the context of political debate over syphilis, with particular reference to issues which related to degeneration such as national efficiency and eugenics.[9] Such concerns conflated the most conceivably destructive of social and

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[7] See, for example, R. Alexander, *The "Girl Problem": Female Sexual Delinquency in New York, 1900-1930* (Ithaca and London, Cornell University Press, 1995); C. Strange, *Toronto's Girl Problem: The Perils and Pleasures of the City, 1880-1930* (Toronto, University of Toronto Press, 1995).

[8] See, especially, E. Fee, 'Sin versus Science: Venereal Disease in Twentieth-Century Baltimore', in E. Fee and D. Fox (eds), *AIDS: The Burdens of History* (California and London, University of California Press, 1988), 141-64; S. Gilman, *Difference and Pathology: Stereotypes of Sexuality, Race and Madness* (Ithaca and London, Cornell University Press, 1985); J. Kehoe, 'Medicine, Sexuality and Imperialism: British Medical Discourse surrounding Venereal Disease in New Zealand and Japan', Ph.D. thesis, Victoria University (1992); L. Manderson, *Sickness and the State: Health and Illness in Colonial Malaya, 1870-1940* (Cambridge, Cambridge University Press, 1996).

[9] See, for instance, M. Thomson, *The Problem of Mental Deficiency: Eugenics, Democracy, and Social Policy in Britain, c.1870-1959* (Oxford, Clarendon Press, 1998); R. Soloway, *Demography and Degeneration: Eugenics and the Declining Birthrate in Twentieth-Century Britain* (Chapel Hill and London, University of North-Carolina Press, 1990); G. Jones, *Social Hygiene in Twentieth-Century Britain* (London, Croom Helm, 1986).

In relation to French political culture, see R. Nye, *Crime, Madness and Politics in Modern France: The Medical Concept of National Decline* (Princeton, Princeton University Press, 1984). P. Weindling, *Health, Race and German Politics between National Unification and Nazism, 1870-1945* (Cambridge, Cambridge University Press, 1989) provides the German scientific and political context. For

medical pathologies: syphilis, mental deficiency and insanity. Prostitution and female promiscuity were linked with feeblemindedness in the popular consciousness, providing the impetus for the pathologising of sexuality and the incarceration of those deemed to be *offenders*.[10] Historians stress that venereologists and alienists acknowledged the worst mental and physical effects of syphilis to be hereditary, provoking wide public concern for marital fidelity, the 'sins of the fathers' and the 'syphilis of innocents',[11] and encouraging doctors and alienists to become moral guardians as well as medical men. This strand of the syphilis historiography regards hereditarian and social darwinist forms of thought as key concerns,[12] with the concept of *civilisation and syphilisation* linking prostitution, syphilitic disease and moral degeneracy as aspects of the city. Thus degeneration was conceived and constructed as an urban phenomenon.[13] Showalter defines general paralysis of the insane (GPI), a tertiary form of syphilis, as 'the perfect Darwinian disease because it linked immoral behavior to hereditary causes',[14] thus outlining the perception of GPI as a degenerative disease caused by a hereditary disposition to vice, a conception disseminated by Darwinian alienists.

However, there are weak strands within the existing historiography. Due partly to the fact that GPI was not proven to be a late form of syphilis until the second decade

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a European survey, see D. Pick, *Faces of Degeneration: A European Disorder, c.1848-c.1918* (Cambridge, Cambridge University Press, 1989).

[10] See, especially, L. Mahood, *The Magdalenes: Prostitution in the Nineteenth Century* (London and New York, Routledge, 1990); P. Cox, 'Girls, Deficiency and Delinquency', in D. Wright and A. Digby (eds), *From Idiocy to Mental Deficiency: Historical Perspectives on People with Learning Disabilities* (London and New York, Routledge, 1996).

[11] See, for instance, E. Showalter, 'Syphilis, Sexuality, and the Fiction of the Fin de Siecle', in R. Yeazell (ed.), *Sex, Politics, and Science in the Nineteenth-Century Novel* (Baltimore and London, Johns Hopkins University Press, 1986), 88-115; M. Spongberg, 'Written on the Body: The Congenital Syphilitic as Moral Degenerate', Conference on Comparative Perspectives on the History of Sexually Transmitted Diseases, Institute for Commonwealth Studies, London, April 1996, unpublished conference paper; G. Tilles and D. Wallach, 'Can Marriage Prevent Syphilis?: The French View of Syphilis Prophylaxis in the Nineteenth Century', Conference on Comparative Perspectives on the History of Sexually Transmitted Diseases, Institute for Commonwealth Studies, London, April 1996, unpublished conference paper.

[12] See, for instance Spongberg, *Feminizing Venereal Disease*; L. Bland, *Banishing the Beast: English Feminism and Sexual Morality, 1885-1914* (London, Penguin, 1995); G. Jones, *Social Hygiene in Twentieth-Century Britain* (London, Croom Helm, 1986); J. Welshman, 'Eugenics and Public Health in Britain, 1900-1940: Scenes from Provincial Life', *Urban History*, 24:1 (1997), 56-75.

[13] See, for example, S. Gilman and J. Chamberlin (eds), *Degeneration: The Dark Side of Progress* (New York, Columbia University Press, 1985); Strange, *Toronto's Girl Problem.*

[14] E. Showalter, *The Female Malady: Women, Madness and English Culture, 1830-1980* (London, Virago, 1996), p.111.

of the twentieth century,[15] the syphilis historiography does not adequately allow us to address the host of issues which an investigation of tertiary syphilis, or neurosyphilis,[16] calls for. Firstly, the social history of syphilis concentrates upon contagion, set as it is within an infectious diseases framework. Since public health legislation concerned itself with the acute infectious stage of syphilis, rather than the secondary and tertiary stages of the disease, that historiography which analyses social policy and syphilis is of only secondary relevance to the themes and approach of this study. It is not entirely clear why there has been this historiographic preoccupation with infection and the primary stage of syphilis. It might be connected to the fact that the statutory legislation relating to venereal disease concentrated on infection, leading historians to concentrate on this area of study. It might also reflect public concern over contracting such a disease, and thus the wish to understand and master it more thoroughly than the later stages of syphilis, which a patient might take twenty years to reach. The historiography of AIDS likewise chooses to concentrate on the initial stage of infection, despite the finding that sixty per cent of late AIDS patients suffer some form of mental impairment.[17]

Secondly, this body of work largely presumes an objective diagnostic category in addressing syphilis. There has been a general failure to address issues of disease taxonomy and construction; and a failure to differentiate between the various forms of venereal disease, such as syphilis and gonorrhoea. For both these reasons, the main body of literature relating to the social history of syphilis fails to address some of the major themes of this study.

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[15] H. Noguchi and J. Moore, 'Demonstration of Treponema Pallidum in the Brain in Cases of General Paralysis', in C. Thompson (ed.), *The Origins of Modern Psychiatry* (Chichester, John Wiley and Sons, 1987), 217-24.

[16] It is acknowledged that for the majority of this period, the fact that these disorders were caused by syphilis was not yet fully accepted, thus the term *neurosyphilis* is merely a convenient way of referring to the four disorders - GPI, syphilitic insanity, tabes dorsalis, and cerebral syphilis - collectively. The term did emerge during this period, but not until the 1920s. However, before this period there is no accurate generic term, so that I am using it for convenience in a nominal way. It is the most practical way to refer collectively to those disorders caused by syphilis which affect the brain and central nervous system.

[17] J. Catalan, 'The Psychiatry of HIV Infection', *Advances in Psychiatric Treatment*, 3 (1997), p.20.

The historiography of psychiatry complements the syphilis literature in addressing the issue of degeneration, defining it as a major concern of Victorian psychiatry.[18] This literature also provides insight into the provision for and treatment of the insane in the asylums of Edinburgh and Glasgow, along with the preoccupations and theories of Scottish alienists.[19] However, it concentrates primarily upon the nineteenth century, neglecting the twentieth. It also focuses on the Chartered (Royal) institutions, neglecting the provision of district and parochial asylums from the 1870s in Scotland.[20] This historiography also tends to address the patient population of these institutions as a whole, or as individual (usually atypical) patients, rather than specific diagnostic categories of patients. Where individual studies do use diagnostic categories, neurosyphilis rarely figures.[21]

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[18] For a discussion of the concept of degenerationism in psychiatry, see R. Huertas, 'Madness and Degeneration', four parts, *History of Psychiatry*, 4 (1993), 1-319; J. Saunders, 'Quarantining the Weak-Minded: Psychiatric Definitions of Degeneracy and the Late-Victorian Asylum', in W. Bynum, R. Porter and M. Shepherd (eds), *The Anatomy of Madness: Essays in the History of Psychiatry*, volume three (London and New York, Routledge, 1988), 273-96; J. Browne, 'Darwin and the Face of Madness', in W. Bynum, R. Porter and M. Shepherd (eds), *The Anatomy of Madness: Essays in the History of Psychiatry*, volume one (London and New York, Tavistock, 1985), 151-65.

The alienist Henry Maudsley's work on the deterioration of race most obviously applies Darwinist theories to insanity. See, for example, H. Rollin, 'Whatever Happened to Henry Maudsley?', in G. Berrios and H. Freeman (eds), *150 Years of British Psychiatry, 1841-1991*, volume one (London, Royal College of Psychiatrists, 1991), 351-8; T. Turner, 'Henry Maudsley: Psychiatrist, Philosopher and Entrepreneur', in Bynum, Porter and Shepherd (eds), *The Anatomy of Madness: Essays in the History of Psychiatry*, volume three, 151-89. Pick, *Faces of Degeneration*, addresses both Darwin and Maudsley as aspects of the broader theme of degeneration in the nineteenth and twentieth centuries.

[19] See, for instance, J. Andrews, 'A Failure to Flourish? David Yellowlees and the Glasgow School of Psychiatry', two parts, *History of Psychiatry*, 8 (1997), 177-212 & 333-60; A. Beveridge, 'Madness in Victorian Edinburgh: A Study of Patients Admitted to the Royal Edinburgh Asylum under Thomas Clouston, 1873-1908', two parts, *History of Psychiatry*, 6 (1995), 21-54 & 133-56; F. Rice, 'Madness and Industrial Society: A Study of the Origins and Early Growth of the Organisation of Insanity in Nineteenth-Century Scotland, c.1830-1870', Ph.D. thesis, two volumes, University of Strathclyde (1981); J. Andrews and I. Smith (eds), *'Let There be Light Again': A History of Gartnavel Royal Hospital from its Beginnings to the Present Day* (Glasgow, Gartnavel, 1993).

[20] For the exceptions to the rule, see G. Doody, A. Beveridge and E. Johnstone, 'Poor and Mad: A Study of Patients Admitted to the Fife and Kinross District Asylum between 1874 and 1899', *Psychological Medicine*, 26 (1996), 887-97; H. Sturdy, 'Boarding Out the Insane, 1857-1913: A Study of the Scottish System', Ph.D. thesis, University of Glasgow (1996).

[21] In fact this body of work tends to chart the history of present-day disease categories. See, for example, G. Berrios, 'Memory and the Cognitive Paradigm of Dementia During the Nineteenth Century: A Conceptual History', in R. Murray and T. Turner (eds), *Lectures on the History of Psychiatry: The Squibb Series* (London, Gaskell, 1990), 194-211; E. Hare, 'The Two Manias: A Study of the Evolution of the Modern Concept of Mania', *British Journal of Psychiatry*, 138 (1981), 89-99. The fact that cases of neurosyphilis are rarely seen in the post-antibiotic era perhaps explains its relative absence in this body of literature.

The historiography of syphilis rarely refers to the relationship between mental illness and syphilis, although some reference is made to mental deficiency in relation to venereal disease. Likewise, the historiography of psychiatry contains little substantial work relating to syphilis. Those historians who have discussed neurosyphilis have tended to adopt a range of historiographical approaches. These have included the heroic, Whig approach to diagnosis[22] and treatment;[23] the triumph of laboratory methods in refining and objectifying a psychiatric diagnosis;[24] GPI as an example of a stable and paradigmatic disorder within the development of psychiatric taxonomies;[25]

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[22] See, for example, W. Nicol, 'General Paralysis of the Insane', *British Journal of Venereology*, 32 (1956), 9-16; T. Rosebury, *Microbes and Morals: The Strange Story of Venereal Disease* (London, Secker and Warburg, 1972).

[23] Although not the most successful treatment for neurosyphilis, malarial therapy has stimulated interest in the history of this disease category. See, especially, M. Whitrow, *Julius Wagner-Jauregg, 1857-1940* (London, Smith-Gordon, 1993). This therapy also provides a case study for J. Braslow, 'Effect of Therapeutic Innovation on Perception of Disease and the Doctor-Patient Relationship: A History of General Paralysis of the Insane and Malarial Fever Therapy, 1910-1950', *American Journal of Psychiatry*, 152:1 (1995), 660-5, to examine how biological treatments can affect physicians' perceptions of patients, and enhance a physician's ability to empathise with a patient's suffering. Braslow analyses the language of medical records from a Southern California Asylum, contrasting pre-malaria descriptions of neurosyphilitic patients as 'hopeless' and 'immoral' with post-malaria more positive and empathetic verdicts.

Such a treatment raises the ethical issues of laboratory experimentation and patient rights, with the seemingly extreme measure of injecting a patient with one serious illness to cure them of another, especially the experimentation on disempowered groups such as the elderly, the poor and racial minorities. Such questionable ethics regarding the experimental treatment of neurosyphilitics are investigated in a racial context by J. Jones, *Bad Blood: The Tuskegee Syphilis Experiment* (New York, The Free Press, 1993). See, also, S. Lederer, '"The Right and Wrong of Making Experiments on Human Beings": Udo J. Wile and Syphilis', *Bulletin of the History of Medicine*, 58:3 (1984), 380-97; T. Savitt, 'The Use of Blacks for Medical Experimentation', *Journal of Southern History*, 45 (1982), 331-48; E. Valenstein, *Great and Desperate Cures: The Rise and Decline of Psychosurgery and Other Radical Treatments for Mental Illness* (New York, Basic Books, 1986).

[24] See, for instance, J. Oriel, *The Scars of Venus: A History of Venereology* (London, Springer-Verlag, 1994).

[25] See G. Berrios, '"Depressive Pseudodementia" or "Melancholic Dementia": A Nineteenth Century View', *Journal of Neurology, Neurosurgery, and Psychiatry*, 48:5 (1985), 393-400, for a refutation of this claim. He disputes the monolithic nature of the GPI diagnosis, citing wide nineteenth-century disagreements concerning the clinical domain, course and histopathology of GPI as evidence.

In 'The Origin and Spread of Dementia Paralytica', *Journal of Mental Science*, 105 (1959), 594-626, E. Hare provides an historical and epidemiological overview of this disorder's spread through Europe. His main point is to suggest that dementia paralytica was a new disease arising from a mutation in the syphilitic virus towards the end of the eighteenth century, due to either changes in the host or changes in the infecting organism. Hare also raises a number of interesting points, not least the significance of this disorder's plurality of names, and the confidence of each generation of psychiatrists to diagnose dementia paralytica but their eagerness to doubt the validity and accuracy of their predecessors.

GPI as proving the organic basis of insanity;[26] and GPI in relation to a range of social dysfunctions, illustrative in particular of concerns over degeneration.[27]

Limitations of Existing Literature

Little has been written specifically on the history of neurosyphilis in the English literature. The only neurosyphilitic category to be addressed by historians to date has been GPI. This is found in the work of Margaret Thompson and Juliet Hurn. However, Thompson treats it as a stable diagnostic category and does not utilise case notes. As a result, the conceptual framework of this literature is weak, with respect not only to the epistemology of GPI but also to neurosyphilis. Hurn explores only GPI, and over a wider geographical area and period than this study, allowing little room for detailed work on individual patients and their clinical records.[28] This concentration on GPI is understandable, given the estimate that up to twenty per cent of late nineteenth-century British male asylum admissions were due to GPI,[29] but neglects those other neurosyphilitic disorders - cerebral syphilis, syphilitic insanity and tabes dorsalis - diagnosed in the asylums of Edinburgh and Glasgow.[30] Furthermore, the very fact that most of these studies choose to analyse only the nineteenth century disregards those

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[26] See, for example, E. Ackerknecht, *Medicine at the Paris Hospital, 1794-1848* (Baltimore, The Johns Hopkins Press, 1967), pp.170-1; G. Zilboorg and W. Henry, *A History of Medical Psychology* (New York, Norton, 1941), ch.13.

[27] Thompson and Hurn are the only historians to date to address GPI in more substantial detail. Thompson explores GPI in relation to an individual asylum and its patients, employing the records of the REA in the nineteenth century, and concentrating on the period under Physician Superintendent Thomas Clouston (1873-1908). She addresses the relationship between alcohol, sexuality, vice and madness. See M. Thompson, 'The Mad, the Bad and the Sad: Psychiatric Care in the Royal Edinburgh Asylum (Morningside), 1813-1894', Ph.D. thesis, Boston University Graduate School (1984); M. Thompson, 'The Wages of Sin: The Problem of Alcoholism and General Paralysis in Nineteenth-Century Edinburgh', in Bynum, Porter and Shepherd, *The Anatomy of Madness*, volume three, 316-340. Hurn's work deals exclusively with GPI and is thus far more in-depth. See J. Hurn, 'The History of General Paralysis of the Insane in Britain, 1830 to 1950', Ph.D. thesis, University of London (1998).

[28] However, she does give a very good account of the relationship of GPI to the development of the psychiatric profession, a theme that this thesis does not address.

[29] J. Hurn, 'The Changing Fortunes of the General Paralytic', *Wellcome History*, 4 (1997), p.5.

[30] That said, this thesis is unable to treat the various forms of neurosyphilis equally – it is heavily weighed in favour of GPI. This is partly due to the fact that GPI is the only one of these disorders diagnosed throughout the period in all four asylums. **Appendix 7** shows the relatively very small number of patients diagnosed with the other forms of neurosyphilis. Furthermore, the publications and annual reports utilised for this study deal mostly with GPI, and I have found very little material

major early twentieth-century developments relating to the diagnosis and treatment of GPI, such as the Wassermann Reaction and malarial therapy. A study of nineteenth-century perceptions of general paralytics by both alienists and society more generally will be compared with those prevailing after the definitive discovery that GPI was caused by syphilis.

Finally, the present historiography is based on a narrow source base, neglecting case notes almost entirely.[31] The majority of the neurosyphilis historiography to date concentrates upon secondary literature and contemporary medical and psychiatric textbooks.[32] The more detailed studies of GPI combine this literature with the annual reports of either specific asylums[33] or the General Board of Commissioners in Lunacy.[34] Individual historians have also made use of the published work of key physicians.[35]

Those rare attempts by historians to write a history of GPI have concentrated upon the clinching of the syphilitic aetiology, and tended towards the positivist tradition, depicting a sharp opposition between enlightened scientific progressivists who supported a syphilitic aetiology, and traditionalists who opposed the hypothesis.[36] However, the making of the link between GPI and syphilis has not been considered in any depth by historians, but merely mentioned in passing in most general accounts. Such accounts are flawed on two counts. Firstly, they appear to believe it unnecessary to analyse this 'correct' belief in the syphilitic theory, only feeling it necessary to trivialise previous 'erroneous' beliefs. Secondly, they fail to

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specifically on those other forms of neurosyphilis, further justifying this study's concentration upon GPI.

[31] The sole exception to this being Braslow, 'Effect of Therapeutic Innovation'.

[32] See E. Brown, 'French Psychiatry's Initial Reception of Bayle's Discovery of General Paresis of the Insane', *Bulletin of the History of Medicine*, 68:2 (1994), 235-53; W. Bruetsch, 'Neurosyphilitic Conditions: General Paralysis, General Paresis, Dementia Paralytica', in S. Arieti (ed.), *American Handbook of Psychiatry* (New York, Basic Books, 1974), 134-51; Hare, 'The Origin and Spread of Dementia Paralytica'; Nicol, 'General Paralysis of the Insane'; Showalter, 'Syphilis, Sexuality, and the Fiction of the Fin de Siècle'.

[33] See Thompson, 'The Wages of Sin'; Braslow, 'Effect of Therapeutic Innovation'.

[34] Hare, 'The Origin and Spread of Dementia Paralytica'.

[35] Thompson, 'The Wages of Sin', uses the work of Thomas Clouston; Whitrow, *Julius Wagner-Jauregg*, uses the work of Julius Wagner-Jauregg.

[36] See, for example, C. Quétel, *History of Syphilis* (Cambridge, Polity Press, 1990), pp.162-164; Zilboorg and Henry, *A History of Medical Psychology*, pp.538-46; and D. Leigh in Thompson, *The Origins of Modern Psychiatry*, pp.218-21. Leigh states 'An etiological and therapeutic ignorance, as has been so often the case in medicine, led to some astonishing statements from even the most respected physician.' (p.219)

acknowledge the substantial resistance to this 'correct' syphilitic theory, even after Noguchi and Moore's experiments. Rather than seeing the history of GPI as this progression from ignorance to enlightenment, this thesis analyses the competing accounts of the relationship between GPI, syphilis and insanity. It is important to avoid making the syphilis hypothesis the inevitable outcome of the debate on the nature and aetiology of GPI.[37]

Objectives

The overriding aim of this study is to provide a more comprehensive history of neurosyphilis in Scotland.[38] The asylums of Edinburgh and Glasgow in the period from 1880 to 1930 will allow a fuller investigation of neurosyphilis - the history of physicians' perceptions of patients with this disorder, the diagnostic process, and the treatment that they received. Furthermore, this research will provide an analysis of the epistemological relationship between syphilis and psychiatry in analysing the shaping of neurosyphilis as a diagnostic category. This study will approach disease sociologically, combining the notions that disease is a language,[39] the body a representation,[40] and medicine a social phenomenon.[41] Sontag has influentially addressed the need to demetaphorise illness and purify medical thinking and writing of

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[37] It follows that other accounts of the GPI aetiology could have been sustained had different scientific and social forces prevailed, and that we should regard our current knowledge of neurosyphilis to be as contingent as earlier knowledge.

[38] Hurn, 'The History of General Paralysis', charts the history of GPI in Britain, but using mostly English records.

[39] See, especially, L. McCullough, 'The Abstract Character and Transforming Power of Medical Language', *Soundings*, 72 (1989), 111-25; L. McCullough, 'Particularism in Medicine', *Criticism*, 32:3 (1990), 361-70.

For an analysis of the ways in which language and discourse construct sexuality, venereal disease and AIDS, see, for instance, Grover, 'AIDS: Keywords'; and P. Treichler, 'An Epidemic of Signification', both in D. Crimp (ed.), *AIDS: Cultural Analysis/Cultural Activism* (Cambridge and London, MIT Press, 1993); P. Treichler, 'AIDS, Gender, and Biomedical Discourse: Current Contests for Meaning', in Fee and Fox, *AIDS: The Burdens of History*.

[40] For an introduction to sociological conceptions of the body and illness, see, especially, B. Turner, *The Body and Society: Explorations in Social Theory* (Oxford, Blackwell, 1984); C. Gallagher and T. Laqueur (eds), *The Making of the Modern Body: Sexuality and Society in the Nineteenth Century* (Berkeley, University of California Press, 1987); T. Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (Cambridge and London, Harvard University Press, 1990).

[41] Turner, *The Body and Society*, p.209, provides these points.

its moralism.[42] However this study, by the use of a social constructionist approach,[43] will argue that neurosyphilis cannot be *purified* in such a fashion.[44]

Sources

The Edinburgh institutions selected for the study are the Royal Edinburgh Asylum (REA) and Midlothian and Peebles District Asylum (Rosslynlee), while the Glasgow institutions are Glasgow Royal Asylum (Gartnavel) and Barony Parochial Asylum (Woodilee). The archives of both the Royal and parochial asylums of Edinburgh and Glasgow are substantial and available to scholars. These parochial institutions have only recently closed, allowing the release of their records, which archivists have indexed but historians have yet to utilise. The selection of asylums was on the basis of case note availability. The Royal Asylums have a complete run of case notes and Annual Reports throughout the period from 1880 to 1930,[45] as does Rosslynlee. Woodilee has Annual Reports for the period from 1883 to 1919 and case notes for the period from 1880 to 1930. Those archives covering the situation at a national level will constitute the first and most general level of research. Asylum annual reports, a more specific source, will constitute the second level of importance in the study, with case notes the most specific and valuable source of the study. The available archives have been broadly clustered into the following six groups:

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[42] S. Sontag, *Illness as Metaphor* (New York, Straus and Giroux, 1978), ch. 8. From a similar perspective, S. Gilman, *Health and Illness: Images of Difference* (London, Reaktion Books, 1995) analyses historical perceptions and representations of disease.

[43] It should be made clear at the outset that while this study will employ the term *social constructionism*, other phrases have been used seemingly interchangeably in the literature. Sociologists of medicine tend to prefer this term - see, for example, P. Wright and A. Treacher (eds), *The Problem of Medical Knowledge: Examining the Social Construction of Medicine* (Edinburgh, Edinburgh University Press, 1982); while sociologists of science tend to opt for *social constructivism* - see, for example, A. Pickering, *Constructing Quarks: A Sociological History of Particle Physics* (Edinburgh, Edinburgh University Press, 1984). Rosenberg has more recently added another term, *framing*, to describe this fashioning of classificatory schemes of disease – see C. Rosenberg and J. Golden (eds), *Framing Disease: Studies in Cultural History* (New Brunswick and New Jersey, Rutgers University Press, 1992).

[44] Gilman, *Difference and Pathology,* demonstrates that implicit cultural narratives about the bodies of women and blacks pervade even medical and scientific texts. In relation to a particular diagnostic category, Micale has likewise argued that hysteria cannot be *purified* since even medical texts depict hysteria as a metaphor rather than an objective diagnostic category. See M. Micale, *Approaching Hysteria: Disease and its Interpretations* (Princeton, Princeton University Press, 1995).

[45] There is one volume of REA case notes missing *circa* 1896.

Medical Press (general and specific)

Medical journals have been an important forum for physicians to discuss their work, and are a useful source for the historian, particularly the *British Medical Journal* and the *Lancet* of the general medical press, the *Edinburgh Medical Journal* and *Glasgow Medical Journal* of the Scottish medical press, and the *Journal of Mental Science* (launched in 1855) and the *Review of Neurology and Psychiatry* (launched in 1902) of the specifically psychiatric press. Their strengths are that they record contemporary debates, locating them within the context of general social concerns such as degeneration and eugenics. They set neurosyphilis in a broader psychiatric and medical context. However, medical journals require to be used with caution, since they were subject to editorial control. The *Lancet* reflects the opinions of general practitioners rather than the Royal Colleges, while the *Journal of Mental Science* was the official organ of the Association of Medical Officers of Asylums and Hospitals for the Insane. Loyalty to the readership was a prime concern of editorial policy, and thus the audience at which the journals were aimed must be considered.

Contemporary Psychiatric Publications

An under-utilised source, few social historians of psychiatry have conducted a survey of the contemporary psychiatry literature. In fact, Scottish alienists were publishing widely during this period. A selection of works on neurosyphilis by the alienists of Edinburgh and Glasgow, such as George Robertson and David Henderson, survive for the period from 1892 to 1923, as does the published work of W. Ford Robertson, Pathologist to the Central Scottish Asylum Laboratory. They provide insights into contemporary psychiatric thought and can be linked to both the case notes of individual patients who were employed in their case studies and to contemporary medical journals in order to compare local developments with the national situation. Furthermore, the extensive publications of Thomas Clouston provide a significant insight into his

conception of patients, disease and social behaviour in the late-nineteenth and early-twentieth centuries.

National Reports

The Medical Officer of Health Annual Reports also provide a means of analysing the national picture and drawing comparisons with the local experience of GPI. They have a section specifically on venereal disease. Similarly, the General Board of Commissioners in Lunacy (the Board of Control after 1913) furnish a comprehensive Annual Report on psychiatry in Scotland, relating both to each individual asylum and to the national picture. Prior to 1956, the only regularly published sources of systematic national information on mental health services were these reports of the Commissioners on asylums and mental deficiency institutions.

These Reports provide a wealth of information, if anecdotal and inconsistent in format, about individual institutions based upon their biannual visitations. The necessity of conforming to legal regulations led to the accumulation of considerable stores of statistical information, often dating back to each institution's birth. However, the format of the reports changed from year to year, reflecting contemporary concerns, such as the effect of the First World War upon psychiatry and the value of open-air therapy in the 1920s. The reports also discuss GPI and the pathological laboratories which were used to diagnose syphilis and neurosyphilis. Their statistics cover the number and distribution of the insane, those patients in private dwellings, dangerous and alien lunatics, and lunatics under judicial factors. From the 1920s, statistics were added on causes of death of pauper patients and causes of insanity (including GPI and syphilitic affections of the brain) for each institution. However, there are no other statistics specifically broken down by diagnosis or cause of insanity.

Asylum Annual Reports

Broadly speaking, medical records fall into two classes - administrative and clinical. Central to the first category are annual reports. This study concentrates upon the clinical records of the asylum patients, providing individual patients' backgrounds, diagnosis and treatment, supplemented by annual reports to shed light on the total patient population. A weakness of this source is that it is specialised for each individual asylum, thus making comparisons problematic, and contains few references to the wider picture. Furthermore, annual reports were intended to both inform and encourage subscribers, and thus statistics might be subject to manipulation to make circumstances appear more favourable. As a result, figures do not always tally with other sources such as case notes and admission registers.

There are also regular changes in content. The earliest nineteenth-century annual reports are very brief, gradually expanding over the century to include patient statistics, annual accounts, and a list of office bearers. From the 1840s, the reports also contain patient statistics showing forms and causes of disease, occupations of patients and other social and medical information; and from 1873, statistical tables as recommended by the Medico-Psychological Association. From 1875, the Annual Reports of the Commissioners in Lunacy are given in full for Rosslynlee, though not until 1876 for the REA, 1883 for Woodilee, and 1902 for Gartnavel. By 1880, these Annual Reports contain a report together with a list of the qualified contributors, directors and officers of the asylums, the Annual Report of the Directors, the Annual Report of the Physician Superintendent, medical statistical tables, economic and financial details, and general asylum regulations. The statistical tables include details on the number of patients who were admitted, readmitted, discharged or who died for each year, each month, and from the asylum's opening. Also included is data on the age, marital status and occupation, the probable cause and form of insanity, length of residence, duration of disorder, causes of death, and the number of staff and patients.

Case Notes

The main source of this study is case notes. A serious consideration of the faults and merits of case notes, their purpose and construction, should be undertaken before using them for research.[46] Clinical records are a rich and under-utilised source.[47] They allow an insight into individual patients, bring together information from numerous sources, and contain unique information unobtainable elsewhere:

> They contain ... the details which never come to publication. In other words, they tell you what was really done to patients, and from this is to be derived the most trustworthy and complete assessment of what doctors believed and thought at any given time, and how their minds were working.[48]

Although this view generously endows case notes with far more honesty and comprehensiveness than it should,[49] such sources do allow the historian to 'clothe the bones' of bare statistics.[50] Historians have a growing interest in hospital and asylum clinical records, since their quality as evidence has been perceived to be more significant than the problems of using them.[51] Historical case notes are a valuable source concerning everyday clinical practice, and allow us to gain insight into contemporary concepts of disease and therapeutic strategies, since it is in them that the theory, discourse and practice of medicine converge. With case notes, we can respond

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[46] For an overview of the historical development of case notes, see, for instance, S. Reiser, 'The Clinical Record in History', two parts, *Annals of Internal Medicine*, 114 (1991), 902-7 & 980-5.

[47] The closure period of 100 years in England and 75 years in Scotland has acted as a disincentive to historical research use, as has their volume and technical content.

[48] A. Nicol and J. Sheppard, 'Why Keep Hospital Clinical Records?', *British Medical Journal*, 290 (1985), p.264.

[49] For a more balanced treatment of the pros and cons of clinical records, see G. Risse and J. Warner, 'Reconstructing Clinical Activities: Patient Records in Medical History', *Social History of Medicine*, 5 (1992), 183-205.

[50] D. Dow, 'The Archives of the Greater Glasgow Health Board', in O. Checkland and M. Lamb (eds), *Health Care as Social History: The Glasgow Case* (Aberdeen, Aberdeen University Press, 1982), p.166.

[51] See, for example, J. Geller, 'A Historical Perspective of the Role of State Hospitals Viewed from the Era of the "Revolving Door"', *American Journal of Psychiatry*, 149:11 (1992), 1526-33; R. Persaud, 'The Reporting of Psychiatric Symptoms in History: The Memorandum Book of Samuel Coates, 1785-1825', *History of Psychiatry*, 4 (1993), 499-510; O. Riha, 'Surgical Case Records as an Historical Source: Limits and Perspectives', *Social History of Medicine*, 8:2 (1995), 271-83.

to Ackerknecht's plea[52] to critically analyse what doctors *did* as well as what they *wrote*. This dissertation does not actually study the insane as such, but observations of them made by the asylum physicians. Such records are neither patients *nor* diseases but texts; yet the rich information which case notes offer the historian must not be discarded. Case notes further provide the most consistent and clearly-recorded examples of functions and techniques being integrated into the hospital by being given documentary status. Various tests and procedures, and the participation of specialist departments in patient care, including the asylum laboratories, were eventually recorded on unique forms which were filed in the case notes. However, sheets could be inserted rather than directly recording the results onto the case notes, thus introducing the risk of loss.

Despite recent interest and innovation in medical record design and use, medical records have been deemed 'chaotic repositories of information'.[53] Over time, the case notes have become fuller as new types of documents are generated, as more tests are carried out on patients, and as fear of legal action makes doctors reluctant to discard any documentation. The methods of data collection are almost always disparate, idiosyncratic and of doubtful consistency, having developed as much by tradition and in response to *ad hoc* demands as by any general or logical approach to the satisfaction of data needs. In fact, there was no formal legal requirement for Scottish asylums to keep case books but only to keep a General Register of Admissions (under the Lunacy (Scotland) Act, 1857). However, better records may have been equated with better patient care, thus ensuring that these institutions did keep such records.

After about 1880, printed forms produced by commercial suppliers were widely used by hospitals to achieve regularity and uniformity in the recording and presentation of information. The standardisation of records by using pre-printed proformas has had both supporters and opponents. The former claim that the criteria of thoroughness and reliability could not be satisfied by records which were open-ended or of a variable format. The latter claim that an individualistic approach to medicine was inhibited and

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[52] E. Ackerknecht, 'A Plea for a "Behaviourist" Approach in Writing the History of Medicine', *Journal of the History of Medicine and Allied Sciences*, 22 (1967), 211-4.
[53] J. Petrie and N. McIntyre (eds), *The Problem Oriented Medical Record: Its Use in Hospitals, General Practice and Medical Education* (Edinburgh, Churchill Livingstone, 1979), p.2.

that such forms may provide misleading indicators that a particular test or examination had been completed. Weed views the proforma medical record as static, containing medical observations and activities grouped in a meaningless fashion, for which reason he advocates the problem-oriented medical record.[54] Despite the introduction of the proforma in the REA in 1874, Rosslynlee in 1889, Woodilee in 1900, and Gartnavel in the 1920s, the records are frequently incomplete due to the inability of patients' relatives to provide information, the failure of staff to record information, or the failure of clerks to copy information. This explains the plethora of literature crying for standardisation.[55]

Confusion is further exaggerated by the insertion of correspondence, both personal and professional, into the files; and by physicians beginning new cases in the record volumes before old ones were finished. Throughout the period of study, the REA retained a standard four-page proforma, so that supplementary loose material and details had to be inserted and long histories were continued on scattered pages throughout the volumes. Alongside this was the continuing habit of physicians to depend on memory for clinical facts, with many appearing to view records principally as notes to jog their memory.[56] In the asylum, a physician familiar with his patient might not feel it necessary to record many details. The records of pauper patients are generally less detailed than those of fee-payers throughout the period of this study, probably because few pauper patients complained about their treatment whereas numerous fee-payers did. The asylum was most likely safeguarding itself. In short, there are '"good" organizational reasons for "bad" clinic records'.[57] Obviously the clinicians were not gathering information for future historical research, so that we must

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[54] For an explanation of the problem-oriented medical record, see, especially, L. Weed, 'Medical Records that Guide and Teach', *New England Journal of History*, 278:11 (1968), 593-600; Petrie and McIntyre (eds), *The Problem Oriented Medical Record.*

[55] See, for instance, Audit Commission for Local Authorities and the National Health Service in England and Wales, *Setting the Record Straight: A Study of Hospital Medical Records* (London, HMSO, 1995); Central Health Services Council Standing Medical Advisory Committee, *The Standardisation of Hospital Medical Records: Report of the Sub-Committee* (London, HMSO, 1965).

[56] Contemporary studies which compare medical records with actual behaviour using audiotapes have found that doctors record little more than half of the information gathered in the history-taking segment of a consultation. See J. Gordon, M. Kearney and P. Watson, 'Medical Records in General Practice', *The Medical Journal of Australia*, 156 (1992), p.704.

[57] H. Garfinkel, '"Good" Organizational Reasons for "Bad" Clinic Records', in H. Garfinkel, *Studies in Ethnomethodology* (New Jersey, Prentice-Hall, 1967), p.186.

understand their rationale for data collection rather than concentrating upon standardising records and thus losing their integrity.

The case notes of a patient are multiple authored and compiled from a number of different sources brought together in such a way as to give quickly accessible information about the patient at any time whilst that patient is resident in the institution. This information reaches the record from the patient, his relatives, the family doctor, and special diagnostic departments. There is therefore a trade-off between multiple authorship and the standard categories of the proforma, with different authors trying to fit subtly different information into uniform categories, and thus losing certain nuances in the data. The first page of the case notes, including the medical certificates, was filled in primarily by family testimony. The interview of a psychiatric patient and his family served as a tool of investigation by the alienist, and as a technique for obtaining further information. This would include an account of the patient's illness, the facts of his background and the significant events of his life, in order to gain some understanding of his experiences, attitudes and symptoms.[58] As the patient was deemed unable to give an adequate or reliable history, the necessary information was largely obtained from other sources, usually relatives.[59] The admitting physician filled in the second page, examining the patient on entry. The history was concerned with symptoms conceived as subjective and which patients had noted for themselves or recalled through specific questioning. This was distinct from the physical examination, which addressed signs that were thought to be objective and noted by the examining clinician. These first two pages were probably taken from other sources and transcribed by a clerk onto the case notes, raising the possibility of transcription errors. The progress reports were then filled in by individual physicians directly onto the case

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[58] For the importance of history-taking interviews to the diagnostic process, see, for example, J. Stoekle and J. Billings, 'A History of History-Taking: The Medical Interview', *Journal of General Internal Medicine*, 2 (1987), 119-27; H. Guly, *History Taking, Examination, and Record Keeping in Emergency Medicine* (Oxford, Oxford University Press, 1996).

[59] H. Brody, '"My Story is Broken; Can you Help Me Fix It?': Medical Ethics and the Joint Construction of Narrative', *Literature and Medicine*, 13:1 (1994), 79-92, analyses how patients, relatives and doctors jointly construct narratives to help them to make sense of illness. On the value of stories and narrative to medical records and medical knowledge, and the value of textual analysis to historians of medicine, see, also, K. Hunter, *Doctors' Stories: The Narrative Structure of Medical Knowledge* (Princeton, Princeton University Press, 1991); A. Kleinman, *The Illness Narrative: Suffering, Healing, and the Human Condition* (New York, Basic Books, 1988); J. Clark and E. Mishler, 'Attending to Patients' Stories: Reframing the Clinical Task', *Sociology of Health and Illness*, 14:3 (1992), 344-72.

notes. The progress notes provide a summary of the condition of the patient at the outset and a chronological record of the patient's progress throughout the duration of care. The rules on the front cover of the REA case notes state that: 'In all recent acute and interesting cases, very frequent if not daily entries are to be made at first.' All other cases were to be reviewed on the first day of January, April, July and October, although most cases were reviewed more frequently.

In modern records, the one piece of information that is routinely processed is the diagnostic classification. Unfortunately the records of many late-nineteenth and early-twentieth century patients lacked even a tentative diagnosis, despite there being a space dedicated to diagnosis in the proforma. This is true of Woodilee until the turn of the century, Gartnavel until 1917, and Rosslynlee until 1922. The REA recorded *disease* and *Skae's classification* until Clouston left in 1908, thereafter replacing this with *prognosis, diagnosis* and *result*. During Clouston's period of Physician Superintendency, he reserved the exclusive right to complete the 'diagnosis' section of the case notes, so that each diagnosis is in his handwriting. However, the medical background of these diagnostic and therapeutic decisions is not supplied, which is where annual reports and contemporary publications may supplement clinical material.

The case notes provide details of social characteristics (including name, age, gender, marital status and occupation), medical characteristics (including the dates of admission and discharge, the cause and symptoms of insanity), progress reports and the results of treatment, although this format is fluid and variable throughout the period from 1880 to 1930 and between asylums. For example, although the REA and Woodilee have sections on personal history (social characteristics), mental condition (including state of mind and general behaviour), and physical condition (such as height, disposition, and previous illnesses) by 1880, Gartnavel does not follow suit until 1883, and Rosslynlee until 1889. A summary of the admitting medical certificates is also provided. Woodilee kept photographs of patients attached to each case note from the 1900s onwards, as well as details of cranial measurements. The other asylums provided some photographs in the post-1890 case notes, though inconsistently. Although photographs are not an essential part of case notes, they are a potentially valuable and illuminating adjunct.

With the transition from bound case note volumes to individual case folders, each patient had a separate set of medical records devoted purely to themself. For Gartnavel, such folders are included in the database sample simply because these individual folders continued to be bound together, and are archived beside the case notes, forming a complete run for the period until 1930. However, the REA is another matter. At the beginning of this project, a complete run of REA case notes was available, and my sample was worked out accordingly. During the course of research, however, a series of case folders was delivered to Edinburgh University Special Collections from Royal Edinburgh Hospital. The exact purpose of these folders remains a mystery, as they tend to replicate patient information already found within the bound volumes, with extra information added on occasion, or paperwork inserted into them. Since there is little additional data within the case folders, I opted simply to concentrate upon the bound volumes.

Laboratory Sources

Investigation of the Central and Western Scottish Asylums Laboratories will illuminate the interaction between laboratory and asylum. These laboratories, set up in 1896 and 1909 respectively, established a specific research programme relating insanity and syphilis. As well as the published work of the Central Laboratory Director, W. Ford Robertson, reference is made to these laboratories in the annual reports of individual asylums, the reports of the Commissioners in Lunacy, and press-cuttings kept within the archives of the REA. Unfortunately, the Western Laboratory Annual Reports only survive for the years 1929 and 1933, and minutes and correspondence for the post-1931 period; while the Central Laboratory has Annual Reports for the years 1929, 1930, 1936, 1945 and 1947. The Annual Reports contain secretary and treasurers' reports, a report of the work done in the laboratory, and an abstract of the accounts and Board of Management.

Methodology

Computing Methodology

Computers are one way of processing the considerable amount of data I wished to extract from the case notes, and also of linking this data with other records which might augment my historical understanding of neurosyphilis, such as the general admission registers and the admission certificates. This data had first to be made machine-readable. Using the relational database ACCESS, I transferred the case notes as fully as possible onto computer without scanning them in. The bulk and condition of the archival material deemed them inappropriate for scanning, while scanning is not yet sophisticated enough to process information anyway. Furthermore, entering the case notes into the computer in their entirety would have been overly time-consuming and unnecessary. A relational database was favoured over a flatfile database, since the former holds information more efficiently where the amount of data varies from patient to patient. Excerpts of the case notes used are given in **Appendices 1** and **2.** These are fairly typical examples from each of the Glasgow Asylums under study, chosen since they differ quite significantly in their style.

In the computation of the case notes, an attempt has been made to maintain the basic integrity of the documents while extracting as much information as possible. A choice has often to be made between maintaining the integrity of a document or ensuring a meaningful and worthwhile analysis by standardising entries to a limited extent; that is, opting for either a *source-* or *model-oriented approach.* This study utilises the latter, without allowing the data to be compromised to any significant extent. Transferring documents to the database is difficult, because a range of issues have to be resolved. It is necessary to explicitly impose a structure on the archives. Many documents provide structures which are easily accommodated into applications like spreadsheets and databases. As **Appendix 2** demonstrates, the first half of the case notes are semi-structured documents and are thus amenable to database insertion. However the prose section of the case note progress notes is more problematic. This problem is augmented in the pre-proforma case note example, shown in **Appendix 1**, which is purely prose.

Case notes must be understood to be incomplete and multi-authored. The diagram in **Appendix 3** gives an overview of the 'testimonies' (sources of information) and how they build into the case notes. The patient testimony is missing in many cases, since it is only really recorded where letters are inserted into the case notes. This table is available if the patient or relative wrote a letter to the asylum *and* if that letter is retained in the case notes, allowing the only real chance to hear the patient's voice. The patient was rarely consulted as a part of the admission process. However the family of the patient, the two certifying physicians, the asylum physicians and pathologist, might all contribute different parts of the information held in the case notes. In this sense, case notes are themselves a form of record linkage, bringing together different data on a patient, copied by a clerk into the book with the progress reports then filled in by individual physicians. However, the part played by the family of the patient must be qualified. Although they provided much of the information and impetus for initial asylum admission and diagnosis, their information was taken from them (and thus out of its original context) and fitted into a medical record-keeping framework which they were not a part of and would not understand. These various testimonies will be highly significant to this study.

As **Appendix 3** demonstrates, all tables except *letters, certificate symptoms* and *treatment* have a one-to-one relationship, meaning that they might have been joined together without duplication of information. However, they have been divided for two reasons. Firstly, this division ensures that each table is of a manageable size, thus ensuring clarity and easing the manipulation of data. Secondly, and more importantly, such a division of the case note information into these tables retains the basic character of the records. Although the information in these tables is not as artificially distinct in the case notes, the data is implicitly separated in such a fashion. Replicating this in the database makes clearer the fact that the information which these records contain comes from a variety of sources, a fact which is highly significant for this study. The *letters, certificate symptoms* and *treatment* tables have a one-to-many or one-to-zero-or-many relation, since a patient will have one or more symptoms and zero or more letters and treatments. The primary key, *ID*, provides a unique identifier for each patient (it is a counter in this

case), and becomes the foreign key[60] in these three tables, to allow the linkage of an individual patient with his or her various letters, symptoms and treatments.

The computer can be used as a powerful indexing tool, and as a way to uncover meaningful patterns which otherwise would take far longer to discover. Once the data was organised into the databases specially constructed for this study, adding a number of derived variables where appropriate (denoted by an asterix in **Appendix 4**), greater versatility and flexibility were possible in the types of questions I was able to ask of the data. Those topics most amenable to computerisation and quantification include the social characteristics of the patient, their duration of stay, and frequency of laboratory tests. Those least amenable include aetiology and the progress notes. Inevitably there lies between the two extremes a large amount of data where both qualitative and quantitative methods may be used successfully to complement each other. Thus, despite the fact that this study makes use of a specially constructed database for each asylum, qualitative methods were also used where this method was judged the more useful of the two. There is also the fact that the databases themselves can be used qualitatively, since I have entered large amounts of data in prose form so as not to lose the fullness of the material. This particularly relates to both the admission certificates and the progress notes. Using the databases both quantitatively and qualitatively, I wished to examine whether GPI was age-, gender- or class-specific, that is, what factors might have affected diagnosis and treatment. The database makes it easier to count, compare and contrast patient details. It is possible to correlate symptoms and treatment with social and medical characteristics. Those patients referred to the pathological laboratory or given treatment can be counted and analysed to see what factors isolated them from other patients.

It is inevitable that data is not consistently amenable to database insertion. Where coding or standardisation is utilised, ideally information is first entered as it appears in the original document, so as to retain the original for reference at later stages. The researcher must thus try to steer a path through the two equally unacceptable

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[60] A *foreign key* is a primary key from one table which is replicated in another so as to enable the two tables to be joined together. When a set of tables can be linked together on the basis of common fields, the researcher is able to navigate between them and retrieve any logically related data as a single unified record. See C. Harvey and J. Press, *Databases in Historical Research: Theory, Methods and Applications* (London, Macmillan, 1996).

extremes of either prematurely collapsing the data or maintaining the original data entirely. There is, furthermore, a tension between the historian's sense of the particular and the computer's generalising tendencies. The computer can reveal patterns which one might otherwise miss, but care must be taken regarding what is sacrificed to allow such 'clarity'. However tempting it may be to 'lose' the complexities and ambiguities of the data, the computer allows no justification of this any more than qualitative methods would. The computer forces you to confront ambiguities, so that source sensitivity is vital throughout the process of computerisation. When information is fluid or difficult to decipher, the historian requires to understand its nature very thoroughly indeed before computation is attempted.[61] **Appendix 4** outlines the contents of each database table. Those fields where data is coded, standardised or altered in form are denoted by an asterix. A question mark indicates those fields which have only a *yes* or *no* response. The remaining fields are either text or numerical. **Appendix 5** elaborates on the table contents generally, and these issues of coding and standardisation more specifically.

Patient Selection

The databases that I have constructed contain the records pertaining to those patients admitted to the four asylums between January 1880 and December 1930 with neurosyphilis as a final form of insanity. This means that the chosen patients were diagnosed with GPI, juvenile GPI, syphilitic insanity, tabes dorsalis or cerebral syphilis at some point during their asylum stay, and that this diagnostic label was not superseded. This diagnosis could occur on admission, at some point during their stay in the asylum, or on death. A preliminary diagnosis was made in the general register, and then possibly revised in the case notes, which the post-mortem diagnosis could also revise. As **Appendix 6** reveals, this is a four stage diagnostic process, and a process that is crucial to this thesis. Each neurosyphilis diagnosis that these patients received, be it general register, case note, or post-mortem, is equally valid and interesting, although

[61] R. Porter and A. Wear (eds), *Problems and Methods in the History of Medicine* (London, New York and Sydney, Croom Helm, 1987), p.170.

hardly equivalent. The differences will be made more explicit in subsequent chapters, but suffice it to say at this point that the databases reflect this four-stage process by recording each type of diagnosis in a separate column, to preserve this important distinction for the analysis stage. **Appendix 7** outlines my sampling procedure, and the exact sample number of patients for each asylum.

It should be noted that some patients will have been missed, particularly in the earlier part of this period, where the *case note diagnosis* was frequently omitted or given as 'unknown' or 'unascertained'. Of course the general register was very helpful in this respect - all four asylums were bound by law to keep this register over the period under study. However, not all patients with a final diagnosis of neurosyphilis were initially diagnosed as such. Unfortunately, *form of disorder* was not even recorded in the case notes until as late as 1922 in the case of Rosslynlee. Until this time, if the general register either did not record a diagnosis, or recorded a disorder other than neurosyphilis, and the post-mortem diagnosis was not recorded, I felt it too subjective (as well as time-consuming) to read through all case notes and make the diagnosis myself. It therefore seems fair to state at the outset that this database should not be regarded as comprehensive. However, more importantly, retrospective diagnosis is not an issue. I am interested, quite simply, in those cases which the asylum physicians of the period deemed to be neurosyphilis. Those cases which may have been neurosyphilis but went undiagnosed are another subject altogether and quite outwith the remit of this study. It is not important that the database is complete in counting incidence (that is, those who *actually* had neurosyphilis), since this information is quite outwith the historian's reach. What is far more important is that false diagnoses are not made retrospectively.[62]

[62] It might also be stated that there were patients in these asylums who had syphilis recorded as a cause of insanity, but the fact that their diagnosis was something other than neurosyphilis made them irrelevant to this study. Asylum populations could suffer from syphilis, just like the outside population, without this reaching the tertiary stage.

A sociological approach will be utilised, thereby gaining an understanding of neurosyphilis as 'at once a biological event, and a generation-specific repertoire of verbal constructs'.[63] Any diagnostic category is an artificial construct, so that the fluidity of the neurosyphilis aetiology and diagnosis, and the proliferation of terms used to define GPI,[64] become vital to our understanding of medical conceptions and constructions of disease. This study takes a social constructionist approach, utilising the literature relating to the sociology of knowledge and the sociology of scientific and medical knowledge, to throw light upon the shaping of this particular diagnostic category.[65]

Social constructionism challenges the view that knowledge is based upon objective observation of the world, and is therefore in opposition to positivism and empiricism. All ways of understanding are historically and culturally relative, with those forms of knowledge which abound in any culture being artefacts of it, thus making the notion of *truth* problematic. Thus, a sociological approach to knowledge and its production will be utilised as a methodology, and as an approach which regards the production of technical knowledge in relation to its cultural background.[66] Such an approach has been used in relation to scientific knowledge, to focus on both that knowledge associated with a specific social context, and the social uses of knowledge, such as to advance collective goals. Within social constructionism, there can be no such thing as an objective fact. All knowledge is derived from looking at the world

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[63] Rosenberg and Golden, *Framing Disease*, p.xiii.
[64] Including *general paralysis, general paresis, paralysis of the insane,* and *dementia paralytica.*
[65] See, especially, M. Nicolson and C. McLaughlin, 'Social Constructionism and Medical Sociology: A Study of the Vascular Theory of Multiple Sclerosis', *Sociology of Health and Illness*, 10:3 (1988), 234-61, for an application of this theory to a medical case study. As further examples of the application of this methodology to specific diagnostic categories, see M. Bartley, 'Coronary Heart Disease and the Public Health, 1850-1983', *Sociology of Health and Illness*, 7:3 (1985), 289-313; J. Gabbay, 'Asthma Attacked? Tactics for the Reconstruction of a Disease Concept', in Wright and Treacher, *The Problem of Medical Knowledge*, 23-48; C. Lawrence, '"Definite and Material": Coronary Thrombosis and Cardiologists in the 1920s', in Rosenberg and Golden, *Framing Disease*, 50-82. G. Berrios and R. Porter, *A History of Clinical Psychiatry: The Origin and History of Psychiatric Disorders* (London, Athlone, 1995) provides a comprehensive introduction to the construction of psychiatric diagnostic categories.
[66] See, for example, B. Barnes, *Scientific Knowledge and Sociological Theory* (London and Boston, Routledge and Kegan Paul, 1974); D. Bloor, *Wittgenstein: A Social Theory of Knowledge* (New York, Columbia University Press, 1983); S. Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago and London, University of Chicago Press, 1994); S. Shapin, 'History of Science and Its Sociological Reconstructions', *Historical Science*, 20 (1982), 157-211.

from a particular perspective, and is in the service of some interests rather than others. Going further than those studies which aim to challenge value-free and positivist understandings of science are those which refute the idea of science altogether.[67] This is often regarded as an extreme relativist position in the social constructionist debate, a position that this study will not take.

Within this body of literature is a section devoted to the sociology of medicine,[68] which questions the positivist assumptions of medical writing and the alleged neutrality of science and laboratory medicine. The ideal of medicine as asocial and objective has become untenable, allowing an investigation of both the boundaries (real or imagined) between the medical and non-medical,[69] and the concept of science, technology and medicine as aspects of modern culture.[70] This sociological literature also examines the role of laboratories in the construction of knowledge.[71] Foucault's approach to medicine recognises that changes in the form of knowledge are related to forms of power, and implies that the body is a cultural object which is the product of classification.[72]

The social construction of psychiatry began with the influential claim of Szasz that 'mental illness is a myth'.[73] Studies of the social construction of mental illness tend to question the legitimacy and reliability of psychiatric diagnoses, arguing that mental illness does not exist except as a means to justify the labelling, stigmatisation

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[67] See, especially, B. Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Milton Keynes, Open University Press, 1987); B. Latour and S. Woolgar, *Laboratory Life: The Construction of Scientific Facts* (Princeton, Princeton University Press, 1986).

[68] See, especially, L. Jordanova, 'The Social Construction of Medical Knowledge', *Social History of Medicine*, 8:2 (1995), 361-81.

[69] See, for example, Wright and Treacher, *The Problem of Medical Knowledge*; I. Lowy (ed.), *Medicine and Change: Historical and Sociological Studies of Medical Innovation* (Paris, Inserm, 1993); B. Turner, *Medical Power and Social Knowledge* (London, Sage Publications, 1987).

[70] See, especially, J. Pickstone (ed.), *Medical Innovations in Historical Perspective* (Basingstoke, Macmillan, 1992); G. Lawrence (ed.), *Technologies of Modern Medicine* (London, Science Museum, 1994); S. Reiser, *Medicine and the Reign of Technology* (Cambridge, Cambridge University Press, 1981).

[71] See, especially, A. Cunningham and P. Williams (eds), *The Laboratory Revolution in Medicine* (Cambridge, Cambridge University Press, 1992); B. Latour and S. Woolgar, *Laboratory Life: The Construction of Scientific Facts*, second edition (Princeton, Princeton University Press, 1986); L. Fleck, *The Genesis and Development of a Scientific Fact* (Chicago, University of Chicago Press, 1979).

[72] M. Foucault, *The Birth of the Clinic* (London, Tavistock, 1973). See, also, D. Armstrong, *The Political Anatomy of the Body: Medical Knowledge in Britain in the Twentieth Century* (Cambridge, Cambridge University Press, 1983).

[73] The anti-psychiatrists of the late 1960s - including Laing, Cooper, Basaglia and Szasz - have been most influential upon the subsequent historiography of psychiatry. See, especially, T. Szasz, *The Myth of Mental Illness* (London, Granada Publishing Limited, 1972).

and incarceration of those deemed inconvenient or deviant by the psychiatric profession, with the connivance of society.[74] Meanwhile, less radical revisionists argue that although mental illness does exist, psychiatry is a political issue first and foremost.[75] This study will adopt a less 'conspiratorial' model or political agenda, focusing instead on the ways in which psychiatric diagnoses are made and disease classifications are shaped.

Fleck was among the first systematically to apply sociological principles to scientific knowledge, in relation to syphilis and the Wassermann reaction, the field of science in which he was an active researcher.[76] Fleck illuminates the way ideas, theories and scientific discoveries are produced collectively rather than individually, and disputes the very concept of *facts* in addressing the social and cultural conditioning of scientific knowledge. Kehoe has more recently applied Fleck's method to discourses of venereal disease in New Zealand and Japan to examine 'the historical and cultural specificity of medical theories and practices surrounding venereal disease'.[77] She examines how such discourses were constructed in a way that inextricably linked the popular notions and concerns of society with the interests and theories of medicine. Medical conceptions and treatments of syphilis are best understood, she asserts, in relation to the contemporary cultural, political and historical knowledge of that world. Inherent in supposedly biological and scientific categories of disease are a host of social assumptions, so that only by addressing diagnosis by this constructionist method can we understand it more fully. Such a theory, which holds epistemology to be central, will provide the methodology for this study.

However, adopting a social constructionist approach raises a major methodological problem, particularly relating to chapter four of this thesis - the cross-temporal comparison of symptoms. There is an implicit assumption running throughout this study that the symptoms described and associated with GPI are consistent over time. Although this rather runs against the 'social constructionist'

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[74] Originally used in the sociology of deviance, Szasz has utilised labeling theory to explain mental illness as stigmatised behaviour.

[75] See, especially, D. Ingleby (ed.), *Critical Psychiatry: The Politics of Mental Health* (Harmondsworth, Penguin, 1981). The foundations of this book were laid by the relation of knowledge and power put forth in M. Foucault, *Madness and Civilization: A History of Insanity in the Age of Reason* (London, Routledge, 1995).

[76] Fleck, *The Genesis and Development of a Scientific Fact.*

[77] Kehoe, 'Medicine, Sexuality and Imperialism', p.i.

method of locating persons and events within their specific historical context, in practice there is no easy way to resolve this issue.

Synopsis

The first two chapters of the thesis are contextual, placing this study of neurosyphilis within its broader context. Chapter two provides an historical overview of those neurosyphilitic disorders found within the four asylums since the early nineteenth century – GPI and juvenile GPI, tabes dorsalis and tabetic GPI, syphilitic insanity, and cerebral syphilis – placing them within a European context. The chapter sketches a history of the genesis and developing understanding of these disorders, and their changing identities, as well as exploring the related issues of classification and terminology. The following chapter examines institutional provision for the insane in Scotland over the nineteenth and early twentieth centuries. The period from 1880 to 1930 was crucial to the development of the system of asylumdom in Scotland, witnessing the results of the major pieces of legislation relating to insanity in Scotland – the Lunacy (Scotland) Act of 1857 and the Mental Deficiency and Lunacy (Scotland) Act of 1913. Most importantly, the post-1870 period sees the development of parochial and district asylums within Scotland, intended to allow a more comprehensive system of care for the insane poor. The chapter also examines the regime of these institutions, looking specifically at the four asylums under study, and sketching their patient populations for the period from 1880 to 1930.

The remaining chapters are comparative, providing detailed empirical studies of the four asylums and the database data compiled for each. Chapters are thematic rather than chronological or institution-specific. Chapters four and five explore the diagnosis of neurosyphilis. The former examines the clinical diagnosis of neurosyphilis in the period before laboratory methods were available for the diagnosis of the insane. It outlines the main symptoms of GPI, and discusses whether or not the disease had a coherent and stable identity. The issue of differential diagnosis is also discussed, particularly important to the diagnosis of GPI since it could imitate so many other disorders with its plurality of symptoms. This chapter also includes a brief discussion

of the theory and practice of classification, since diagnosis first requires the creation of a framework into which cases can be placed. Chapter five then assesses the interaction between laboratory and clinical psychiatry from 1897 onwards, when asylum laboratories were established in Scotland. This chapter discusses the establishment and work of these laboratories, and their role in the diagnosis and treatment of neurosyphilis, in particular their application of the Wassermann test to GPI. This test provides an excellent means of studying the laboratory-clinic relationship at both published and case note level, as well as the issues of disease identity and the production and negotiation of medical knowledge.

Chapter six explores the treatment of neurosyphilis. At the beginning of this period, there was no specific treatment for these disorders, other than palliation and mercury. However the early-twentieth century witnessed the introduction of various therapies within the asylums of Scotland, including salvarsan, tryparsamide and malarial therapy. In particular, malaria was heralded as revolutionising the treatment of neurosyphilis, and as the first 'heroic' physical treatment of the twentieth century. As with the previous chapter, however, the published comments of physicians on the efficacy of these therapies lie in stark contrast to the case note findings. Chapter seven then explores aetiological theories of GPI over the nineteenth and twentieth centuries. The recognition of syphilis as a cause of GPI was scant until the late-nineteenth century, before which GPI was conceived to have many causal pathways, relating largely to broader social concerns and medical ideologies of the period, such as civilisation and degeneration. In constructing their causal theories of GPI, Victorian alienists assumed a new medico-moral role as 'priests of the body' to their urban populations. Chapter eight concludes the thesis, drawing together the main findings of the study.

Chapter Two: A History of Neurosyphilis

This chapter will provide an historical overview of the neurosyphilitic disorders found in the asylums of Scotland since the early-nineteenth century, placing them within a European context. In asylum annual reports of this period, fluid and overlapping terminologies proliferated, disappearing and reappearing from one year to the next.[1] Thus, as well as sketching a history of the discovery and changing identity of these disorders, issues of classification and terminology will be addressed.

General Paralysis of the Insane

A Historical Overview of GPI's Genesis

During the nineteenth century, GPI emerged as a new psychiatric disorder that was quickly to become perceived as extremely common and quite devastating. Although retrospective studies have found earlier instances of what may have been the same disorder,[2] the first clearly identified examples of GPI were described in Paris during the Napoleonic Wars. In his thesis on *The Emotions, considered as Causes, Symptoms, and Means of Treatment in Insanity*, presented in 1805, the French alienist Esquirol[3] noted the clinical symptoms of GPI, and was the first person in France to record the existence of paralysis among insane persons.[4] In 1816, he noted that the majority of a series of 230 patients suffering from dementia were also afflicted with paralysis. It appears that he regarded it as a complication because the

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[1] Delineation and classification of mental disorders has remained fluid and fiercely contested, as successive editions of the *Diagnostic and Statistical Manual of Mental Disorders*, the internationally recognised guide to psychiatric diagnosis, reveal.

[2] E. Brown, 'French Psychiatry's Initial Reception of Bayle's Discovery of General Paresis of the Insane', *Bulletin of the History of Medicine*, 68:2 (1994), p.235.

[3] Credited as the first physician to give a course of lectures on mental diseases.

[4] In his discussion of madness in the authoritative *Dictionnaire des Sciences Medicales*, Esquirol listed *la paralysie* as a complication, along with *la phthisie* and *le scorbut.*

physical symptoms of paralysis occurred after the mental symptoms of insanity, and because he could not correlate these symptoms with any particular form of insanity.[5]

The frequent incidence of paralytic symptoms among the insane, as well as the fatal prognostic implications of a diagnosis of paralysis, were thus well known when Bayle[6] entered the Royal Asylum for the Insane at Charenton.[7] At the time of his research, the prevailing interpretation of the occurrence of paralytic symptoms among the insane was Esquirol's view. Bayle first announced his views about paralysis in his medical thesis, presented for the Doctorate of Medicine to the Faculty of Paris in 1822, when he was twenty-four years old. He described, under the name *arachnitis chronique*, cases of what was later to be called *general paralysis of the insane*. Entitled *Recherches sur les Maladies Mentales*, this thesis presented the results of his researches at Charenton. It was divided into three chapters, each devoted to describing cases of insanity which were secondary to disorders located outside the brain.[8] In this thesis, and in two pamphlets published in 1822 and 1826, Bayle ambitiously rejected Esquirol's view that paralysis was a complication of insanity.[9] He recorded the opinion that general and incomplete paralysis and mental disorder, when they developed side by side, were caused by chronic arachnitis.[10] In other words that these two groups of phenomena – a certain form of paralysis and disorder of the mind – were the associated symptoms of a definite disease, having a distinctive pathological anatomy. Bayle did not discover the symptoms of GPI. Yet,

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[5] Brown, 'French Psychiatry's Initial Reception', p.243.

[6] Antoine-Laurent-Jesse Bayle, before entering psychiatry, studied with Laennec, a leading advocate of pathological anatomy. He then began his brief career in psychiatry as an intern at the Royal Asylum for the Insane at Charenton, where he studied under Royer-Collard. Bayle focused on clinicopathological research, performing a great number of autopsies. After Laennec died in 1826, Bayle retired not only from psychiatry but also from clinical medicine, becoming a librarian and bibliographer.

[7] Trouseau noted that these symptoms could be found frequently in the case notes of that asylum before Bayle arrived.

[8] *Ibid.*, p.244.

[9] A. Bayle, *Récherches sur L'Arachnite Chronique, la Gastrite et la Gastro-Enterite Chroniques, et la Goutte, Considérée Comme Causes de L'Aliénation Mentale* (Paris, Didot le Jeune, 1822), translated in M. Moore and H. Solomon, 'Contributions of Haslam, Bayle, and Esmarch and Jessen to the History of Neurosyphilis', *Archives of Neurology and Psychiatry*, 82 (1934), 807-29.

[10] He states that in 1818, soon after going to Charenton, he was struck by the frequency with which he found the meninges affected in insanity, and he believed that these changes were frequently related to a particular variety of mental disorder. In his thesis, he called this inflammation of the meninges *chronic arachnitis.*

the association of these two orders of symptoms by Bayle, and his view that they indicated the existence of a definite pathological entity amounted, according to the french physician Baillarger, to the greatest advance ever made in the history of mental disease.

Atrophy of the convolutions, suggested by Delaye, a medical assistant of Esquirol, in his thesis, and described by Foville in his article on 'Alienation' in 1829 in the *Dictionary of Medicine and Surgery*, seems to have been the only important sign that escaped Bayle's attention.[11] However, there were significant disagreements about Bayle's pathological findings, and a general denial of his rigid progression of mental symptoms. The young alienist was widely regarded as being over-confident in his theory, to the extent of overlooking observational discrepancies. His contemporary Calmeil, the french alienist who succeeded Bayle at Charenton - who was, in contrast, cautious in his statements – was more warmly received. Although Calmeil clearly treated what he termed *paralysie générale des aliénes* as a separate species, and tentatively attributed both mental and physical symptoms to a constant lesion (*encephalite chronique*), he fought shy of claiming that the lesion defined the disease. Nor did he claim that any specific form of madness was observed. Bayle's *ambitious monomania* was, he suggested, a striking feature present in many, but not all, cases.[12] The monograph of Calmeil, according to the Edinburgh alienist Skae:[13]

> is generally regarded as the standard authority on this subject, but, except for the fact that Bayle described the disease as a *chronic meningitis*, while Calmeil described it without any such conclusions

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[11] G. Robertson, 'The Discovery of General Paralysis', *Journal of Mental Science*, 69 (1923), p.19.

[12] L. Calmeil, *De la Paralysie, Considérée Chez les Aliénés* (Paris, Bailliére, 1826), cited in J. Hurn, 'The History of General Paralysis of the Insane in Britain, 1830 to 1950', Ph.D. thesis, University of London (1998), p.34.

[13] David Skae (1814-1873) was born in Edinburgh and educated in St. Andrews, before returning to Edinburgh to study medicine. In 1836, he became a Fellow of the College of Surgeons of Edinburgh, and began to lecture on Medical Jurisprudence in the Extra-Academical Medical School there. His attention was first directed to the subject of insanity in connection with mental and nervous physiology. He was surgeon to the Lock Hospital, and wrote several original papers on syphilis. In 1846, the Physician Superintendency of the REA fell vacant with the death of Dr. McKinnon. With its regulation that one of its chief objects was to teach insanity and extend knowledge of it, Skae was considered the most suitable man for the position. He held the post of Physician Superintendent from 1846 until 1873. Faced with the problem of dealing with a rapid influx of patients to the Asylum, it is understandable that Skae became interested in the problem of classification. He adopted a scheme which correlated each type of insanity with any accompanying physical affection. He made a significant contribution to psychiatric progress, lecturing on insanity and giving clinical demonstrations at the REA.

> as to its pathology, as "Paralysis Generale des Alienes," I cannot but regard Bayle's work (1822) as the more graphic and the more complete of the two.[14]

Although the honour of the differentiation of GPI clearly belongs to French alienists, the first clinical description of GPI recorded in the medical literature had already been described in 1798 by the Englishman, John Haslam, surgeon-apothecary to Bethlem.[15] Published in London in 1798, his work consists of a brief report of twenty-nine consecutive cases which came to autopsy, with a brief clinical description and summary of the pathological changes, of which four may conceivably have been cases of GPI according to Bruetsch.[16] In addition, there is a short discussion of the general subject of mental disorder and its causes. In his description of cases, Haslam did not endeavour to classify the cases or draw significant conclusions. However, he not only described the associated mental and physical symptoms and the pathological findings, but also made certain deductions of an original nature regarding paralysis. He observed the frequency of the association of paralysis and insanity, whether as cause or effect, recognising the seriousness of the prognosis in such cases. Furthermore he pointed out, many years before Bayle, the association of extreme feebleness of body with feelings of well-being, elation and pride.[17]

Despite Haslam's early work in this field, the literature fails to reflect his significant involvement in the discovery of GPI. It seems significant that none of Haslam's contemporaries credited him with the discovery or even the description of GPI, although they were almost certainly well acquainted with his work. In his Croonian lectures of 1849, the British author Conolly not only made no reference to Haslam, but said 'it is extraordinary that scarcely a trace, if even a trace of a

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[14] D. Skae, 'Contributions to the Natural History of General Paralysis', *Edinburgh Medical Journal*, 5 (1859-60), p.886.

[15] His contribution to the subject is contained in his *Observations on Insanity: with Practical Remarks on the Disease, and an Account of the Morbid Appearances on Dissection.*

[16] W. Bruetsch, 'Neurosyphilitic Conditions: General Paralysis, General Paresis, Dementia Paralytica', in S. Arieti (ed.), *American Handbook of Psychiatry* (New York, Basic Books, 1974), p.134.

[17] Robertson, 'The Discovery of General Paralysis', p.5.

description of a paralysis, so distinct and peculiar in its character, should be found until we come to the writings of physicians yet living';[18] yet Haslam had died in 1844. Neither did Bucknill[19] and Tuke[20] mention Haslam in connection with GPI, nor do Falret of France, or the German alienist Krafft-Ebing. However, as Moore and Solomon pointed out, while Haslam unquestionably described a case of GPI, its full significance was lost on him, nor was it apparent to the medical profession.[21] In fact, after Bayle's work, a considerable time elapsed before a retrospective analysis of the literature led to the discovery of Haslam's description.[22]

GPI's florescence in the asylums of Paris seemed puzzling to doctors, as did its apparent novelty and comparative infrequency in Britain. Until mid-century it was regarded as a primarily French disease. From France, epidemiological studies show that the new disease spread slowly across Europe and to the New World, gradually changing in its clinical manifestations. And yet there was a belief in the antiquity of GPI, which persisted through much of the nineteenth century. The British author, Austin, stated:

> General paralysis, though it had doubtless existed from the earliest period of insanity, eluded observation or at least never so fixed the attention of those who must have witnessed it, as not to be recognized and described as a distinct disease till the early part of the present century.[23]

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[18] Cited in E. Hare, 'The Origin and Spread of Dementia Paralytica', *Journal of Mental Science*, 105 (1959), p.603.

[19] John Charles Bucknill (1817-1897) qualified in medicine and surgery at the University of London in 1840. After working at University College Hospital and in Chelsea, he was appointed the first Medical Superintendent of Devon County Asylum in 1844, a post that he held for 18 years. He became the first editor of the *Journal of Mental Science,* and in 1858 collaborated with Hack Tuke on *A Manual of Psychological Medicine*.

[20] Daniel Hack Tuke (1827-1895) was the youngest son of Samuel Tuke and the great grandson of William Tuke, the founder of the Retreat. He worked as a Steward at the York Retreat (1847-1850), before studying medicine in London. After travelling the asylums of Europe, he returned to York to set up in medical practice. In 1858, he published the *Manual of Psychological Medicine* with Bucknill. In 1875, he returned to London and became a consultant in lunacy, and then Superintendent of Hanwell asylum. In 1880, he became joint editor of the *Journal of Mental Science*, remaining so until his death. His most ambitious publication was the *Dictionary of Psychological Medicine*, for which he enlisted the help of 128 contributors, and for which he himself contributed 68 articles.

[21] Moore and Solomon, 'Contributions of Haslam', p.807.

[22] *Ibid.*

[23] Hare, 'The Origin and Spread', p.596.

Yet there is strong evidence, gathered by Kraepelin[24] (in 1913 and 1927), that GPI must in fact have been rare before the Parisian outbreak. In 1875, the Scottish Commissioner in Lunacy, Browne, said:

> It would be difficult to rest satisfied with the belief that, whatever may be the cause, general paralysis did not exist until about 50 years ago, or that it had entirely escaped the cognizance of physicians, general and special; yet it is certain that on examining the works left by Pinel and his predecessors it is impossible to discover any monographic description of this frightful affliction, now so readily detected and diagnosed, although these distinguished men had, for long periods, access to all the experience afforded in Asylums for the Insane.[25]

Although GPI presented a very striking clinical picture, there is no clear description of it and certainly no evidence that it was at all common until the Parisian outbreak described by Esquirol, Bayle and Calmeil. George Robertson considered that the Napoleonic wars must have produced 'a large harvest of cases of general paralysis', many of which would come to the two great mental hospitals of Paris, Bicetre and Charenton (the latter catering particularly for army officers).[26] These hospitals had been re-organised by or under the influence of Pinel, the french alienist who is credited with having introduced kindness and orderliness into the regime and insisting on full and carefully recorded case notes. However, this does not account for the later history of GPI and for that evidence which suggests that, from its origin in northern France, the disease spread in a fairly well-defined manner across Europe, then to America, and later still to less highly industrialised countries. The most likely explanation for those who accept this epidemiological account is that GPI was not recognised before the early nineteenth century because it had rarely or never occurred before; it was recognised by the Parisian alienists because it became so common there that it could not be missed.

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[24] Emil Kraepelin (1856-1926) was the central figure of German fin-de-siècle psychiatry. He secured his first university professorship in psychiatry (in Estonia) at the age of 30, before moving on to more prestigious posts in Heidelberg and Munich.

[25] Hare, 'The Origin and Spread', p.604.

[26] *Ibid.*, p.606.

The British alienist George Burrows visited several Parisian asylums in 1817 and 1822, and a few years later described Bayle's work in his textbook of insanity - one of the first clear references in a British publication.[27] Paralyses of all kinds, he noted, were common complications of insanity. Bayle, however, had described a 'peculiar species' associated with chronic meningitis, hesitation of the speech and partial weakness of the lower limbs. It was this last physical feature which Burrows selected as the basis for his English name *incomplete paralysis*. Over the following years, British alienists began to describe the disorder in increasing numbers, and with growing conviction. Burrows' original term was quickly discarded, and by the 1830s the names *general paralysis* and *general paralysis of the insane* were commonly understood.

Esquirol claimed to be 'convinced that when [British alienists] have learned better to distinguish the symptoms of paralysis which complicate insanity, they will find ... particularly at London, as many insane paralytics as at Paris'.[28] The majority of British alienists were indeed willing to admit that they had to 'learn to see' GPI; and that the unfamiliar disease had probably been under-recognised in their own country. John Conolly, for example, recounted his initiation into GPI. He admitted that he had never noticed a case when he first read Calmeil's description in 1826; but having been shown several patients during a visit to the Charenton, he began increasingly to notice the disease at home.[29] Careless classification in public asylums was commonly blamed for this lack of recognition, as well as the common refusal of private asylum keepers to admit paralysed patients whom they regarded as incurable.[30] In Britain, very little progress was made into the study of GPI, relative to the work being done in France. In his 1835 treatise on insanity,[31] the Bristol alienist Prichard was largely influenced by contemporary French writers, and he

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[27] G. Burrows, *Commentaries on the Causes, Forms, Symptoms and Treatment Moral and Medical of Insanity* (London, T. and G. Underwood, 1828).
[28] J. Esquirol, *Des Maladies Mentales Considerees sous les Rapports Medical, Hygienique et Medico-Legal* (Paris, J. Bailliere, 1838), translated by E. Hunt as *Mental Maladies: A Treatise on Insanity* (Philadelphia, Lea and Blanchard, 1845), p.439.
[29] J. Conolly, 'Clinical Lectures on the Principal Forms of Insanity: Lecture XI', *Lancet*, 1 (1846), p.233.
[30] Prichard, for example, complained: 'Patients are dismissed from Bethlem when they manifest any indication of paralysis, and the events of such cases cannot ... be correctly noted'. See J. Prichard, *A Treatise on Insanity* (London, Sherwood, Gilbert and Piper, 1835), p.109.
[31] *Ibid.*

came to the conclusion that GPI was a rare disease in Britain compared to the higher prevalence in the Paris hospitals. Not until 1859 did Thomas Austin write what he claimed to be the first separate volume on the subject by a British author.[32]

According to Hare, the disease does not seem to have been diagnosed in Scotland until 1839, nor was this due to lack of knowledge of it.[33] 'I saw the disease in Paris in 1832', says Browne, 'but did not recognize it in this country till 1839'.[34] It soon became fairly common in Edinburgh and Glasgow, but elsewhere remained rare or unknown for many years.[35] Skae says that his former pupil, Howden, who had been well acquainted with the disease in Edinburgh, could not find a single case among the 300 patients of the Montrose Asylum; and during the years 1869 to 1872, among 200 admissions to the Fife and Kinross Asylum, Batty Tuke discovered only four cases. As late as 1879, Maudsley[36] could remark that GPI was 'hardly ever met with in the highlands of Scotland', while in 1893, the Inverness District Asylum claimed that cases of GPI were 'regarded by some authorities as practically unknown'.[37] And yet, the proportion of deaths due to GPI in all the asylums of Scotland was officially given as 19.2 per cent in males and 4.7 per cent in females for the period from 1858 to 1895.[38]

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[32] T. Austin, *A Practical Account of General Paralysis, its Mental and Physical Symptoms, Statistics, Causes, Seat and Treatment* (London, John Churchill, 1859).

[33] Unfortunately the REA does not provide a 'form of insanity' table in its Annual Reports until the 1850s, so that it is not possible to chart the epidemiology of the disease until then. The Gartnavel Annual Reports give such a table a little earlier, but not until 1859 is GPI included within it.

[34] Hare, 'The Origin and Spread', p.608.

[35] *Ibid.*

[36] Henry Maudsley (1835-1918) is widely considered to have been an outstanding English philosopher alienist of the nineteenth century, one of the world's foremost thinkers and writers on the physiology and pathology of the mind. He graduated with an M.B. and M.D. from the University of London. His early bias was in favour of surgery, but one of his first appointments was that of resident physician to the Manchester Royal Lunatic Hospital (1859-1862). In 1908, Maudsley founded one of the world's most prestigious hospitals for the treatment and study of insanity – the Maudsley Hospital in south-east London.

[37] *29th Inverness District Asylum Annual Report*, 1893, HHB 3/8/10, p.16.

[38] *38th Commissioners of Lunacy for Scotland Annual Report*, 1896, Greater Glasgow Health Board Archive GGHB13B/14/64, p.lii.

Alienists struggled to shape the identity of GPI until at least the 1860s. In particular, they grappled with the question of how insanity was related to the physical symptoms of GPI. Despite the fact that Bayle had denied the 'dualist' conception of Esquirol (paralysis and dementia as two distinct, though associated, conditions) as early as 1822, Esquirol's dualist theory continued to inspire research at the Salpetrière, particularly under Baillarger in the middle of the century.[39] Since the same mental symptoms could be seen in all manner of conditions, Baillarger believed that chronic periencephalitis could only account for the motor signs, mental symptoms having a different origin.[40] The absence of a link between lesion and symptom also explained why some patients recovered. However, the 'unicist' conception was developed and refined at Charenton by Calmeil, who gave a complete description of the new morbid entity which he called *diffuse chronic periencephalitis*, asking in particular whether the principal anatomical lesions might not be much more serious than those described by Bayle.[41] As Quétel states, the GPI thus defined might have done no more than figure in psychiatric nosography had it not fitted in so well with the arguments of those who believed that the aetiology of madness was necessarily organic. For the majority of alienists, a physicalist stance led naturally to an insistence that both insanity and paralysis were integral to the disease - in fact, part of the same disease process.

From the 1840s onwards, a number of French alienists questioned whether madness was central, or even attached, to GPI. In 1846, Réquin suggested that outside the asylums - in general hospitals and in private practice - doctors might find cases of GPI without any mental symptoms.[42] A year later, Baillarger agreed that paralysis itself was the only fundamental feature of GPI, and that insanity often did not accompany it. During the 1850s, Pinel suggested dividing the disease into 'simple' and 'complicated' cases, in which insanity was absent and present

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[39] C. Quétel, *History of Syphilis* (Cambridge, Polity Press, 1990), p.161.
[40] G. Berrios, 'Dementia: Clinical Section', in G. Berrios and R. Porter (eds), *A History of Clinical Psychiatry* (London, Athlone, 1995), p.39.
[41] Quétel, *History of Syphilis*, p.161.
[42] Hurn, 'The History of General Paralysis', p.40.

respectively. Alienists, he suggested, were only aware of those patients with the latter form who had become inconvenient or dangerous to society.[43]

In the response of British alienists such as Mott and Tuke, however, it is clear how important it was felt to retain insanity as central to the definition of GPI. Mott, the distinguished director of the Laboratory of the London County Asylums, deemed GPI to be an interesting disorder precisely because it involved *both* physical and mental symptoms.[44] Tuke considered it 'unphilosophical' to leave insanity out of the fundamental definition of the disease, and denied that there was any period with physical manifestations alone, since one could never prove the absence of mental symptoms.[45]

British authors such as Burrows and Conolly tended to regard GPI as a 'calamitous' physical complication of insanity until the 1840s, partly because the non-specific mental symptoms shifted attention to the well-defined and specific physical features.[46] Over the next twenty years, however, GPI would become a disease in its own right. The basis upon which this claim could be made had been suggested in the French debates: specific and constant brain pathology, a predictable clinical natural history, and correlation between the two. The alienist Harrington Tuke wrote copiously about GPI from the 1850s, and demonstrated well the struggle to raise it to disease status. To Tuke, the obvious organic basis of the disorder was not sufficient for this claim. Certainly, gross brain lesions were constantly present at post-mortem, and certainly there was a consensus upon some broad features - for example inflammation of the membranes and softening and atrophy of the surface cortex.[47] Nevertheless, changes were acknowledged to be neither specific nor constant, and certainly by no means as characteristic as Bayle had claimed.

Whilst alienists continued to negotiate the exact mental and physical parameters of GPI, by the late 1860s it was virtually unanimously accepted as a disease in its own right. Not until 1869 did the Medico-Psychological Association officially recognise this, as they endorsed a decision of the International Congress of

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[43] *Ibid.*
[44] D. Power and J. Murphy (eds), *A System of Syphilis, volume 4: Syphilis of the Nervous System* (London, Oxford University Press, 1910), p.259.
[45] H. Tuke, 'On General Paralysis', *Journal of Mental Science*, 6 (1859), p.427
[46] Connolly, 'Clinical Lectures', p.235.
[47] Hurn, 'The History of General Paralysis', p.37.

Alienists that GPI was 'a distinct morbid entity, and not at all ... a complication, a termination of insanity'.[48] Textbooks followed suit within a few years. Bucknill and Tuke's manual, for example, listed GPI as a complication in 1862, but as a separate disease in 1874.[49] And yet a discussion on GPI in 1879 revealed several of the speakers claiming constantly to meet with cases presenting the various somatic symptoms of GPI without there being any accompanying mental enfeeblement: 'We have never satisfied ourselves that mental weakness must result from this disease, but we have never yet seen a patient dying of this disease who was in sound mind.'[50] Presumably this means that although cases of GPI might not exhibit mental symptoms, it was only those patients with mental symptoms who died of the disorder.

Scotland very much reflected those confused external debates on the nature of the insanity attached to GPI. Skae preferred to view the disease as a form of paralysis complicated with insanity.[51] Clouston, REA Physician Superintendent from 1873 to 1907, did not attach insanity necessarily to GPI - GPI was merely a disease with certain motor characteristics, with the quality of progression going from bad to worse. Gartnavel Physician Superintendent Yellowlees was not quite disposed to go so far as Clouston, but he agreed to an extent:

> when he saw the first man he said, "Look out for that man's mind, I do think it will go" ... In other cases, though you knew the man was unwell, yet his condition was such that you could not say there was anything insane about him.[52]

And yet as Skae and Clouston summed up:

> The question therefore is a mistake entirely, whether general paralysis is a paralysis complicated with insanity, or a form of insanity complicated with paralysis. It may be either the one or the other to begin with, but is always both at the end, if the patient lives long

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[48] 'Report of a Quarterly Meeting of the MPA', *Journal of Mental Science*, 15 (1870), p.635.
[49] Bucknill and Tuke, *A Manual of Psychological Medicine* (1862 and 1874).
[50] M. Voisin, 'Review of "Traite de la Paralysie Generale des Alienes"', *Journal of Mental Science*, 11 (1879), p.412.
[51] Skae, 'Contributions to the Natural History', p.886.
[52] Discussion, 'Quarterly Meeting of the Medico-Psychological Association, held at Glasgow', *Journal of Mental Science*, 22 (1876), pp.334-5.

> enough to run its natural course. In reality it is a pathological disease of the central nervous system, with mental and bodily symptoms.[53]

Throughout the period under study here, however, the case notes of Scottish general paralytics suggest that physical and mental symptoms were characteristic, together, of GPI.[54]

The Organic Status of GPI

As alienists became more unified behind the theory that GPI exemplified the unity of physical and mental, so they increasingly held it up as the best scientific model of mental disease. Through the 1860s and 1870s, members of the profession continued a long preoccupation with the possibility of a 'natural', scientifically-based psychiatric classification rather than one based upon 'mere symptomatology', as had been proposed by Esquirol. Pathology, it seemed, would not provide this basis. In 1858, Tuke conceded:

> We are not yet in a position as regards our knowledge of the morbid appearances of the brain, to base our nosology upon the revelations of the dead-house. We can only wait an advance of knowledge which will render such a classification possible.[55]

Such an advance did not materialise, and in the case of GPI the search for a characteristic brain lesion remained futile: in the 1870s, Blandford, Lecturer on Psychological Medicine at the School of St. George's Hospital, London, could state:

> Every portion of the brain has been thought to be the part affected .... The history of the investigation of general paralysis is this: observer after observer has found some morbid appearance which he has

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[53] D. Skae and T. Clouston, 'The Morisonian Lectures on Insanity for 1873', *Journal of Mental Science*, 21 (1875), p.192.

[54] Of course the very fact that my sources are exclusively from asylums makes it likely that such patients *would* exhibit mental symptoms. Hospital or other sources would be more likely to document patients with *only* the physical symptoms.

[55] Hurn, 'The History of General Paralysis', p.52.

> thought pathognomic of the disease, but which has been found to exist in the brains of other insane patients, or even in the brains of those not insane.[56]

Although the dogma remained that GPI might prove the organic insanity *par excellence*, alienists turned again to the natural history of the disease - the collection of features which gave it a unique identity. GPI was consistently spoken of as the best model for this classificatory ideal, since it cut across many mental symptoms, unfolding as a clear and relatively predictable disease entity.

In Scotland, Skae presented GPI as the model for his 'rational and practical method of classification' since 'its natural history, including its symptomatology, progress, terminations, and pathology, are perhaps more complete than that of any other form of insanity'.[57] Clouston similarly claimed GPI as the key to the future. He defended Skae's classification against the numerous criticisms of the distinguished Edinburgh-born alienist Crichton-Browne, who claimed that Skae's Morningside School, opposing the study of mental symptoms *per se*, had a stranglehold on scientific opinion. Crichton-Browne, who placed great emphasis upon the psychological aspects of mental science, derided dreams of 'mounting a delusion in Canada balsam or ... detecting despondency in a test tube', and held that alienists must be content at present simply to understand symptomatology.[58] Clouston used GPI as the test case against Browne:

> Does he deny that General Paralysis ... is a true cerebro-mental disease, a distinct clinical, symptomatological, and pathological reality? .... The most distinct, the most real, the most undisputed, the truest cerebromental disease ... cannot be provided for in [Esquirol's symptomatic] classification that he [Browne] defends .... Can anything more powerful be urged against our accepting it as final; or any stronger incentive be applied for us to invent a better?[59]

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[56] G. Blandford, *Insanity and its Treatment* (Edinburgh, Oliver and Boyd, 1871), pp.286-7.
[57] D. Skae, 'A Rational and Practical Classification of Insanity', *Journal of Mental Science,* 9 (1863), p.314.
[58] T. Clouston, 'Skae's Classification of Mental Disease', *Journal of Mental Science*, 12 (1875-6), p.533.
[59] *Ibid.*, p 536.

Furthermore, Clouston had great faith that other mental diseases would be revealed to be as unique as GPI:

> Did we know everything about general paralysis and epilepsy, we should find the path of research into most other diseases of the nervous system comparatively easy. They would be the key to all the rest .... It is quite certain that under the term insanity there are included many pathological species of brain disease, just as distinct as general paralysis, which we shall ultimately be able to segregate and distinguish.[60]

Terminology

An interesting aspect of GPI's history is its plurality of names over the last two centuries. Bayle's *arachnitis chronique* of 1822 was succeeded in 1824 by Delaye's term *general paralysis of the insane*, and in 1826 by Calmeil's *paralysie generale des alienes*, this term becoming accepted possibly because it did not assume the unproven pathological cause. The name *general paralysis of the insane* reflected the disorder's early status as a form of paralysis intervening in persons who had already become insane. Later, once Baillarger and others believed they had discovered cases of GPI without insanity, a new name seemed necessary, so that in 1853 Falret advocated *folie paralytique*. However, Calmeil's term was by that time fairly entrenched and remained the favourite in spite of Salomon's quip in 1862 that 'he who is generally paralysed is certainly dead'.[61] Along with the shorter *general paralysis*, Salomon suggested the alternative *general paresis* – a term which went on to enjoy a considerable vogue in America - both terms reflecting the ambivalent mental status of this disorder. However, Tuke suggested that the name *general paralysis* led to erroneous assumptions about the physical alone being fundamental.[62]

To further complicate matters, Krafft-Ebing and other German writers began to favour the name *dementia paralytica*. This term was felt to indicate much more

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[60] Skae and Clouston, 'The Morisonian Lectures on Insanity for 1873', p.189.
[61] Hare, 'The Origin and Spread', p.594.
[62] D. Skae, 'Dr. Harrington Tuke's Paper on the Diagnosis of General Paralysis', *Journal of Mental Science*, 5 (1858), p.78.

clearly the essential clinical features of the disorder - a dementia accompanied by paralysis.[63] *Dementia* has historically been the umbrella term meeting the need for a word to broadly define intellectual, memory and personality impairment.[64] However, since *dementia paralytica* shared the same initials as *dementia praecox*, some alienists shunned this name until the twentieth century, when *dementia praecox* was renamed *schizophrenia*.[65]

By 1880, Mickle,[66] in his authoritative English textbook on the subject, could give a list of eight English and nineteen French synonyms, including *progressive paralysis*, *creeping paralysis*, and *Bayle's disease*. However, his book was entitled *General Paralysis of the Insane*, suggesting his preference for this term. The secondary literature on the history of GPI seems to overlook the proliferation of names for this disorder, and yet it seems necessary at least to consider the possible significance that these alternative names have had for the changing identity of the disease. Most of the clinical and historical literature on neurosyphilis, excepting Hare,[67] seems simply to use these terms interchangeably.

Although this study will utilise the term *GPI* for all references to this disorder, it should be pointed out that the asylums under study highlight very clearly this proliferation of terms. Yet a study of the usage of these terms in the case notes and annual reports of the four asylums in fact shows a very similar pattern. *General paralysis* and *GP* seem to have been the terms of choice until the mid-1910s, when *general paralysis of the insane* and *GPI* became used much more frequently. Only Gartnavel utilised *dementia paralytica* as a diagnosis, from the mid-1910s onwards, but still preferring *general paralysis*.[68] The causes of death tended to include even more pseudonyms, with Rosslynlee utilising *general paralysis, GPI, general paralysis of the insane, general paresis,* and *dementia paralytica* as causes of death

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[63] D. Mackenzie, 'The Evaluation and Differentiation of Mental Disorders associated with Syphilis of the Nervous System', M.D. thesis, University of Edinburgh (1950), pp.31-2.
[64] R. Porter, 'Dementia: Social Section', in Berrios and Porter, *A History of Clinical Psychiatry*, p.52.
[65] Hare, 'The Origin and Spread', p.594.
[66] Julius Mickle was Medical Superintendent of Grove Hall Asylum, London, and published an extensive treatise on GPI in 1880, with an enlarged and revised edition appearing six years later.
[67] Hare, 'The Origin and Spread', p.594.
[68] Henderson's eclectic career saw him work under Meyer and Kraepelin, two significant influences on his later classifications of neurosyphilis within Gartnavel. See **Appendix 9** for a fuller account of Henderson's biographical details.

within this fifty-year period. Both Gartnavel and the REA also ascribed a few deaths to *dementia paralytica* in the later 1920s.

Symptoms

The physical symptoms of GPI were, by the mid-nineteenth century, considered to be key signs for diagnosis.[69] Patients exhibited the Argyll-Robertson phenomenon: the *pupils* were frequently unequal, abnormally dilated or abnormally contracted, and often changed in form.[70] The *tongue* was often put out hesitatingly and showed tremors of individual muscle groups. The *handwriting* revealed characteristic changes. Aside from the frequent coarse and irregular tremors of the organic brain affection, the lines did not go where they should; the letters became abnormally large and unequal; curves were made with corners, and so forth. Disturbance of the *gait* usually became plain somewhat later. The walk became irregular, swaying with legs spread apart, and at the same time weak, and in certain respects spastic. Gradually the entire *muscular system* attained a condition of extreme spastic paralysis; and the patient became entirely helpless. The involuntary muscular system was also affected: swallowing became difficult and impossible; the intestines no longer advanced their content, and there was often paralysis of the bladder. One of the most obvious diagnostic symptoms of the early stages of paralysis was the modification of *articulation*. This was neither stammering nor hesitation of speech. It more closely resembled the thickness of speech observable in a drunken man. In many instances, the speech of the early paralytic was fluent and clear, except in the pronunciation of certain words, or sequences of words, 'due to this want of co-ordinate movement of the muscles of the lips and tongue, which latter organ seems as if too big for the mouth'.[71]

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[69] The physical symptoms of GPI were stable, and so similarly described in the textbooks and articles of this period that reference to one particular work seems unnecessary. See the textbooks of Austin, Bucknill and Tuke, and Mickle, for a full description of all related symptoms.
[70] E. Bleuler, *A Textbook of Psychiatry* (London, Allen and Unwin, 1924), pp.250-1.
[71] W. Barker, *Mental Diseases: A Manual for Students* (London, Cassell and Company, 1902), p.100.

However, the most fundamental symptom of GPI was believed to be enfeeblement of function. There was a steady process of deterioration, producing first impairment and finally destruction or paralysis of the mind, that is, dementia. Weakness of judgement, loss of memory, and a blunting of the sensibilities were found to be present in one shape or another in every case. Forgetfulness was usually a noticeable symptom, with this failure of memory often leading to unexpected mistakes in spelling and calculation. Lifelong habits of courtesy and decent behaviour could be lost, to be replaced by a tendency towards alcoholism, immorality, or even criminal acts, particularly theft.[72] There were mental symptoms most typical and characteristic of GPI, alongside delusions of grandeur. Most frequently there was, immediately preceding the development of the paralytic symptoms described, or accompanying their development, an attack of a peculiar form of mania so often associated with GPI as to have been called *mania paralytica,* and, from its character, *delire ambiteux* by the French writers. This peculiar delirium was very common. The patient fancied himself the possessor of thousands of millions of sovereigns – of shiploads of gold and silver and precious stones; another fancied himself greater than God; another still said he could lift the world. In some cases, there were terrific delusions, with emotional depression; and in others the mental symptoms were merely those of gradually increasing dementia.[73] In the midst of all this imaginary power and grandeur, the patient's facile and frail nature seemed all the more pathetic.

The mental symptoms attached to GPI were generally agreed to be variable. Following Bayle's work, French alienists identified three clinical forms of 'manic-ambitious', 'melancholic-hypochondriacal' and 'dementia'.[74] The relative frequency of such varied symptoms would be perceived to change over time. However, British alienists regarded some kind of expansive insanity (from mild euphoria to florid delusions of grandeur) as classic of the disease throughout its history, and it was this feature which determined most strongly the prevailing popular image of the GPI patient. It was thus referred to as the 'classical' grandiose type. The depressive

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[72] G. Robertson, 'The Morison Lectures, 1913: General Paralysis of the Insane', *Journal of Mental Science,* 59 (1913), p.188.
[73] Bucknill and Tuke, *A Manual of Psychological Medicine,* p.334.
[74] Berrios, '"Depressive Pseudodementia"', p.397.

type, originally rare, became more common during the latter half of the nineteenth century (between 20 and 50 per cent of cases) before again becoming rare.[75]

By 1924, four main types of GPI were differentiated into which most cases could be classed, although there could be continuous transitions from one form to another.[76] The *manic or expansive form* often became manifest through a very acute manic attack with a feeling of intense joy and power, flight of ideas, enormous impulse to activity in which the most senseless delusions of grandeur betray the deep seated disturbance of intelligence. The *melancholic* or *depressive form* usually began less acutely, with less pronounced fluctuations. In the *simple demented form,* stronger exaltations and depressions, delusions, and confused states were lacking. In the rather rare *agitated form*, patients rarely came out of their depression. The delusions took the form of ideas of impoverishment, of sin, and especially of the hypochondriacal and nihilistic types.

Recorded GPI seemed generally to affect a very specific population. The disease was generally observed to be much more frequent among males than females. Males were conservatively recorded as being more often affected than females in the proportion of four to one, although this variation did not occur in cases of juvenile GPI, where the sexes seem to have been equally affected.[77] The disease also appeared to be more common in large cities than in provincial towns or rural districts. The average age at which the disease developed was between 30 and 50 years, with cases outwith these years being relatively infrequent. GPI thus attacked individuals in their prime, with no apparent correlation with 'hereditary propensity' to madness. The average duration of the disease was from two to three years, although a unique case was put on record by Clouston lasting for thirty years.[78] On the other hand, patients could die within a few months. Within a period ranging in length from months to a few years after the appearance of the first symptoms, GPI reduced its victims to a state of dementia and profound weakness.

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[75] Hare, 'The Origin and Spread', p.621.
[76] Bleuler, *Textbook of Psychiatry*, p.257.
[77] D. Henderson and R. Gillespie, *A Textbook of Psychiatry for Students and Practitioners* (London, Oxford University Press, 1927), p.292.
[78] T. Clouston, *Unsoundness of Mind* (London, Methuen, 1911), p.246.

Bayle described GPI as occurring in three stages, although some writers quickly rejected his dogmatic delineation.[79] The first was characterised by a mild paralysis, particularly affecting speech, and a monomania, particularly involving grandiose ideas. The second stage was characterised by a general mania and a worsening of the paralysis; and the third by dementia and severe paralysis. Clouston, as one among many, followed this division of the course of GPI into three stages.[80] First, patients showed fibrillar tremblings, slight incoordination of facial and speech muscles, together with mental exaltation and excitement. The first stage of GPI extended from the commencement of the disease to that point when the insidiously advancing mental symptoms became so evident as to convince the patient's friends of his madness. The disease soon progressed to a mental exaggeration of the most striking kind. His speech would become increasingly tremulous and slurred. The lips, facial muscles, and tongue would tremble when the patient spoke or smiled, especially when such test words as 'Royal Artillery', 'hippopotamus', and 'British Constitution' were articulated. The handwriting became slightly tremulous, with letters omitted in the spelling of words, or some words missed completely. If the patient did not die of exhaustion, or the convulsions to which he was subject in the first stage of the disease, within a few months he would pass into a less excited and exalted stage.[81]

The second stage was characterised by increased muscular incoordination and paralysis with mental enfeeblement. By this stage, patients were generally incontinent, had delusions of grandeur and a staggering gait. The face looked heavy, dull and expressionless. Patients gained in weight, and could not walk far without their legs failing. By the tertiary phase, patients had almost inarticulate speech, and finally 'paralysis with mental extinction'. They required water-beds and careful nursing to prevent leaking urine from creating bed-sores. Death might take place

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[79] Brown, 'French Psychiatry's Initial Reception', p.244.
[80] M. Thompson, 'The Wages of Sin: The Problem of Alcoholism and General Paralysis in Nineteenth-Century Edinburgh', in W. Bynum, R. Porter and M. Shepherd (eds), *The Anatomy of Madness: The Asylum and Psychiatry*, volume three (London, Routledge, 1988), p.326.
[81] Clouston, *Unsoundness of Mind*, p.244.

during an epileptic or apoplectic seizure, from asphyxia in paralysis, or from acute lung disease. However, in the majority of cases, slow decay and final exhaustion was the cause of death. Thus the course of GPI was seen to be one of steady and progressive mental and physical deterioration.

Juvenile General Paralysis

Until the 1870s, GPI was believed to be only a disease of adult age. However, in 1877, the first recorded case of *juvenile general paralysis* was described in Scotland by Thomas Clouston.[82] Clouston described a case of the disease in a boy aged 16, pointing out that, both clinically and pathologically, the disease that affected this patient differed in no significant way from the adult form, although he added that it was an extremely rare disturbance. After this article, cases were published in Germany, Austria, France, and further afield, with the number of diagnosed and published cases thereby increasing as knowledge of this morbid condition became more common. In particular, Alzheimer, Mott, Karplus and Krafft-Ebing were to draw attention to this early form of GPI. In 1895, Alzheimer collected thirty-seven published cases, to which he added three of his own, with careful microscopical examination of the nervous tissues.[83] Mott published notes of twenty-two cases of juvenile GPI occurring in the London County Asylums during a three-year period.[84] The number of cases recorded proceeded to increase every year, although the disturbance was still considered rare relative to the adult form.

Symptoms were typically seen to mimic those of adult paralytics, except perhaps that the dementia could be more severe, and the course more prolonged, averaging about five years between the appearance of initial symptoms and termination in death. However, such cases involved the same picture of progressive mental and physical deterioration, including progressive impairment of memory,

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[82] T. Clouston, 'A Case of General Paralysis at the Age of Sixteen Years', *Journal of Mental Science,* 23 (1877), p.419.
[83] J. Moreira and A. Penafiel, 'A Contribution to the Study of Dementia Paralytica in Brazil', *Journal of Mental Science*, 53 (1907), p.513.
[84] F. Mott, 'Notes on Twenty-Two Cases of Juvenile General Paralysis, with Sixteen Post-Mortem Examinations', *Archive of Neurology*, 1 (1899), 250-327.

comprehension, motor inco-ordination, and speech. The symptoms might appear at any time after birth, although ordinarily there were no noticeable symptoms until the child approached puberty. In 10 per cent, the onset was before the sixth year of life, and in 4 per cent, mental symptoms began after the twentieth year. However, in the great majority of cases, the illness began around the age of fourteen or fifteen.[85] In terms of distribution between the sexes, juvenile general paralysis occurred with almost equal frequency in males and females, females dominating to only a slight extent.

Juvenile GPI was estimated as constituting 1.6 to 1.8 per cent of all cases admitted to British asylums by the 1930s.[86] In relation to my study, no cases of juvenile GPI were found in my sample for the REA, or for the patient populations of Gartnavel and Rosslynlee, in the period from 1900 to 1930. However, Woodilee admitted seven cases of juvenile GPI between 1916 and 1926. The reasons for this are unclear.[87]

Tabes Dorsalis

Tabes dorsalis entered the clinical scene during the 1840s, primarily as a result of work by the emerging German neurological school. First recognized as a clinical entity by Romberg and Duchenne, the German physician Mauritz Romberg coined the term *tabes dorsalis* in 1840. He provided a thorough description of the disease, and also identified the important diagnostic sign that when a patient was made to stand and close his eyes, he lost his balance and fell.[88] The Parisian neurologist, Duchenne de Boulogne, then elaborated this description of tabes, describing

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[85] Bruetsch, 'Neurosyphilitic Conditions', p.148.
[86] *Ibid.*
[87] In September 1900, a Children's Home was built in connection with the Asylum, the first of its kind in Scotland. Perhaps Woodilee therefore took in more young patients than the other asylums in this period, although even this would not explain the concentration of juvenile GPI cases into one specific decade.
[88] However, as Schiller points out, Romberg's teacher Ernst Horn (1774-1848) had inspired five different students to write their doctoral dissertations on this same subject (see F. Schiller, 'Venery, The Spinal Cord, and Tabes Dorsalis before Romberg: The Contribution of Ernst Horn', *The Journal of Nervous and Mental Disease*, 163:1 (1976), 1-9).

locomotor ataxia in his masterpiece of 1858. He clearly differentiated the affection from muscular paralysis occurring in the various forms of so-called *general spinal paralysis* and unclassified forms of *chronic myelitis*. He named it after the most striking symptoms *ataxie locomotrice progressive*. The two interchangeable names for the condition reflect the equal importance afforded to the clinical and pathological features: *tabes dorsalis* referred to the characteristic pathological lesion (wasting of the spine), whilst *locomotor ataxia* referred to the corresponding clinical syndrome. *Locomotor ataxia* expressed a characteristic feature of tabes, but was a symptom that did not occur in the first stage of the disease, the *pre-ataxic stage*. In fact, some cases might die without ataxia, so that the term *tabes dorsalis* was generally felt to be the more applicable.

Knowledge of tabes henceforth grew independently in Germany, France and Britain. Of particular importance to our knowledge of this disease were the discoveries of the reflex pupil rigidity by Argyll-Robertson in 1869, and the absence of the knee-jerk by Westphal in 1875. When the majority of authors discussed tabes, it was as a syphilitic disease of the nervous system without any mental symptoms. Insanity generally did not enter into the definition. Tabes dorsalis became one of the classic expressions of neurosyphilis, of which the major manifestations were due to degeneration of the posterior columns and nerve roots of the spinal cord. A late complication, which might not develop until as long as twenty years after the primary infection, symptoms included excruciating 'lightning' pains in various parts of the body, severe abdominal pain and vomiting, sensory ataxia causing unsteadiness in the dark and a positive Romberg's sign, loss of pain sensation and joint position sense, painless enlargement and disorganisation of joints (Charcot's joints), absent tendon reflexes, muscular hypotonia, and small irregular unequal pupils which accommodated only poorly or not at all to light (Argyll Robertson pupils).

More men than women were diagnosed with tabes: 'Tabes Dorsalis was essentially a man's disease … for it was the male of the species who was supposed to be subject to the excessive desire and practice of sex, i.e. "venery"'.[89] This quote also reveals the issue of when sexual intercourse and its effects entered the

[89] Schiller, 'Venery', p.3.

aetiological debate. And although tabes was exceedingly rare under the age of twenty years, a number of cases are on record in medical literature in which the disease commenced in childhood or youth. Such cases have been described as *infantile* or *juvenile tabes*, or *hereditary syphilitic tabes*, and were extremely rare. The disease tended to run a chronic course, extending on average over a period of ten years, although it could be as long as twenty or thirty years.

Tabetic GPI

Although tabes dorsalis was classified as a physical disorder devoid of mental symptoms, it could have mental complications. The German alienist Westphal observed that there was a form of tabes dorsalis which, many years after its onset, bore features of insanity characteristic of GPI.[90] He was the first to describe the occurrence of GPI and tabes dorsalis in the same patient, and soon *tabo-paralysis* came to be recognised as a well-defined sub-group of GPI. To Westphal, tabes and GPI could no longer be regarded as independent diseases, after which most neurologists gradually came to recognise this close alliance between tabes dorsalis and GPI.

In 1903, an English discussion on the unity of tabes and GPI found that most of the leading authorities – including Mott, Sir William Gowers, Buzzard, Savage and Ferrier – were of the opinion that the two diseases were identical.[91] In Scotland, Byrom Bramwell stated that 11.4 per cent of tabetics passed into GPI, while one third of cases of GPI presented signs of tabes. George Robertson, Physician Superintendent of the REA from 1907 to 1932, warned:

> The appearance of mental troubles in a tabetic ought always to awaken the suspicion of general paralysis, especially if accompanied by signs of confusion, of mental weakness, and of loss of memory, and in which the deterioration is progressive. The development of

[90] C. Westphal, 'Cases of Tabes Dorsalis and Paralysis Universalis Progressiva', *Journal of Mental Science,* 10 (1864), 207-20.
[91] F. Mott, 'Tabes in Asylum and Hospital Practice', *Archives of Neurology*, 2 (1903), 1-10.

> speech difficulties and of a heavy, mask-like expression of the types characteristic of general paralysis are ominous physical signs.[92]

Juvenile tabes was found to end with GPI more frequently than did the adult form.

The combination of these two disorders had many pseudonyms, though it was principally referred to as *tabetic GPI, tabo-paralysis* or *tabetic neurosyphilis*. Tabetic GPI showed characteristics of both GPI and tabes dorsalis, the patient having degeneration both of the cerebral cortex and of the posterior columns of the spinal cord. The dementia was usually of the simple kind, without delusions of grandeur and mood changes. In most cases the tabetic symptoms preceded those of the cerebral process; in other cases the two diseases seemed to develop coincidentally; and in a third, much smaller group, the tabetic signs developed after the onset of the general paralysis.[93]

Tabes with Psychosis

In the course of time, however, certain cases of mental disorder with tabes were observed which, in their onset, clinical type, and course, did not show the characteristic picture of GPI. Kraepelin stated that there occurred, although not very frequently, well-marked cases of tabes with mental disorder which, in their clinical form as well as their course and outcome, differed absolutely from cases of GPI.[94] He considered that the casual complications, such as alcoholism, catatonia, manic-depressive insanity, and so forth which sometimes occurred in cases of tabes could be easily recognised as such, and that one should assume a psychosis peculiar to tabes. Kraepelin believed that there was a psychosis which was commoner than any other in tabes, and which had a course, symptomatology and outcome distinct from GPI. This psychosis consisted of an acute hallucinatory excitement. The patient suddenly became fearful, agitated, and heard distinct voices. The onset was sudden, and later in life, and often at a later stage in the course of tabes than GPI was

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[92] Robertson, 'The Morison Lectures, 1913', p.198.
[93] D. Henderson, 'Tabes Dorsalis and Mental Disease', *Review of Neurology and Psychiatry,* 9 (1911), p.530.
[94] *Ibid.*, p.531.

accustomed to appear. Memory, retention and orientation remained intact, and speech and writing did not present the specific disturbances seen in cases of GPI. The symptoms might subside in a few months, or remain indefinitely.

Some other authors who believed in a special tabetic psychosis were Meyer,[95] Simon, Ruhle, and Schultze. The commonest non-paralytic syndromes appearing in tabetics, according to Meyer, were chronic hallucinatory paranoid states, depressive psychoses, circular psychoses, acute hallucinatory confusion, hallucinatory anxious states and various types of dementia.[96] Lucke, of the McManes Laboratory of Pathology at the University of Pennsylvania, in a pathological and clinical study of 250 cases of tabes dorsalis, found that insanity other than paralysis occurred in six cases, or 2.4 per cent. He was unable to diagnose the types of insanity specifically, but was confident in excluding paralysis.[97]

Tabes with psychosis appeared as a diagnostic category in the Gartnavel Annual Reports in 1921, following Henderson's appointment.[98] Henderson had already published an article on tabes dorsalis by 1911, beginning with the sentence:

> In tabes dorsalis, mental symptoms frequently develop; in the majority of such cases the mental symptoms are evidences of the onset of general paralysis. In a certain number of cases, however, the autopsy has shown that the cortical changes of general paralysis are absent, and therefore the psychosis has arisen on a different basis.[99]

Henderson's interest in subdividing supposed cases of GPI seems to have been because:

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[95] Adolf Meyer (1866-1950) graduated in medicine from the University of Zurich, before moving to the United States to pursue his career in general practice. He was appointed to the Worcester State Hospital, Massachusetts, combining neuropathological work with a clinical directorship, as well as teaching psychology and psychiatry at Clark University. In 1902, he was appointed Director of the Pathological Laboratory of the New York State Hospitals, a post which he combined with a Professorship in Psychiatry at Cornell University. In 1910, he was appointed Professor of Psychiatry at the Johns Hopkins University, Baltimore, and Medical Director of the Henry Phipps Psychiatric Clinic, which opened in 1913.

[96] Henderson and Gillespie, *A Textbook of Psychiatry*, p.319.

[97] B. Lucke, 'Tabes Dorsalis: A Pathological and Clinical Study of 250 Cases', *Journal of Nervous and Mental Disease*, 43:5 (1916), pp.393-403.

[98] Again, Henderson's unusual stance in this regard is surely related to his psychiatric training in New York and Munich underneath Kraepelin and Meyer. In fact, Henderson dedicated his book *A Textbook of Psychiatry* to Meyer.

[99] Henderson, 'Tabes Dorsalis', p.529.

> practically every imaginable mental symptom-complex may occur in general paralysis, and therefore I believe that a distinct necessity exists for a more precise definition of the limits of general paralysis.[100]

Henderson rejected the belief expressed by the majority of authors that tabes and GPI were essentially the same disease, and the belief that all mental disorders occurring in tabes were either due to GPI or to simple casual complications of it. Instead, Henderson concurred with Kraepelin that cases could exist of non-paralytic psychosis occurring in cases of tabes dorsalis. Henderson distinguished such cases from GPI by the late onset of tabes, the type of the mental disorder (acute hallucinatory disturbance, although it could also be a depressed state), the retention of memory and personality, the intactness of speech and writing, and the absence of facial tremor. He felt these facts sufficiently conclusive to differentiate them from cases of GPI.[101] A certain number of patients with tabes dorsalis developed GPI at a later date, but mental symptoms of other kinds might also develop in tabetics who exhibited neither the physical nor the mental symptoms of GPI. At the REA, Robertson also recognised the validity of Kraepelin's theory:

> The striking features ... which distinguish the clinical picture from that of general paralysis are, the sudden onset, the type of the mental disorder, the lack of progression, the intactness of speech and writing, and the absence of facial tremor. These facts, I think, are sufficiently conclusive to allow us to say that these are not cases of general paralysis; they are cases which closely correspond to the type of case described by Kraepelin as typical of the non-paralytic psychosis occurring in cases of tabes dorsalis.[102]

The history of tabes dorsalis has fluctuated between being conceptualised as a disorder devoid of mental symptoms, a disorder related or even identical to GPI, and a separate form of neurosyphilis with mental symptoms. By the 1960s, definitions of tabes tended, once more, not to include mental symptoms - merely physical and

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[100] *Ibid.*, p.530.
[101] *Ibid.*, p.538.
[102] *Ibid.*

serological; and yet the disorder remained in the psychiatric textbooks.[103] Medical definitions of tabes dorsalis describe it as:

> a now uncommon form of neuro-syphilis which may not develop until twenty plus years after the primary infection. Symptoms include 'lightning' pains, severe abdominal pain and vomiting, unsteadiness, painless enlargement of joints, and Argyll-Robertson pupils. Unless GPI coexists (known as tabo-paresis), the mental state is unaffected.[104]

By including tabes as a psychiatric classification, Henderson was in the minority. A start had been made to subdivide the great lump of cases which constituted the diagnostic seemingly catch-all category of GPI. In this period, all four asylums admitted only a tiny number of tabes-related cases. In my sample, the REA admitted only one case diagnosed as locomotor ataxia, in 1904, with Rosslynlee admitting only one case of GPI and locomotor ataxy the following year. Woodilee admitted one patient diagnosed with locomotor ataxia in 1898, and one patient with GPI and locomotor ataxia in 1900. Gartnavel admitted a slightly higher proportion of tabetics, and at a later date than the other three asylums but concentrating them into a two-year period, admitting six cases of tabetic GPI between 1918 and 1919.

Brain Syphilis

Under this generic term, I will discuss the remaining disorders to be found in my patient populations which related syphilis and insanity – *syphilitic insanity* and *cerebral syphilis*. Both the mental and bodily symptoms of brain syphilis attracted more attention on the continent than in Britain in the nineteenth century. However, by the second half of the nineteenth century, some medical interest had been

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[103] For example, R. Adams and M. Victor, *Principles of Neurology* (New York, McGraw-Hill, 1977); J. Gibson, *A Guide to Psychiatry for Students of Medicine* (Oxford, Blackwell, 1963).
[104] J. Walton, J. Barondess and S. Lock (eds), *The Oxford Medical Companion* (Oxford, Oxford University Press, 1994), p.952.

awakened here, in particular by the writings of such men as Hutchinson and Hughlings Jackson, and by Clouston and Henderson in Scotland.[105]

Syphilitic Insanity

Within my four asylums, no cases of *syphilitic insanity* were admitted in the period from 1880 to 1930, except to the REA, where 87 cases of my sample were diagnosed with this disorder. The label *syphilitic insanity* was found in the REA under 'Skae's diagnosis' during Clouston's period as Physician Superintendent. Each REA patient was given two diagnoses, that based on the recommendations of the Medico-Psychological Association, and that based on Skae's classification.[106] The latter was more complicated, an aetiological scheme founded on physicalism.[107] Maudsley, Bucknill, and Blandford all supported Skae's classification or incorporated it into their own classifications. It was within this system that *syphilitic insanity* came, alongside such diagnoses as *epileptic insanity* and *insanity of alcoholism*. Skae felt that his major contribution to psychiatry was this classification of mental diseases, a system which even his most sympathetic biographer, Fish, admits was 'best forgotten'.[108] One of its few supporters, Clouston, wrote of it:

> In large degree it is founded on bodily causation – the "somato-etiological". Its great merit is that it helps the practising physician in his efforts to discover the causes of the insanity and also assists him in his treatment and prognosis.[109]

Skae's classification met with much opposition at the time, including Tuke and Crichton-Browne in the 1870s. However, despite the hostility and its lack of general acceptance, Clouston continued to defend the classification; as late as 1894, he was claiming that Skae's system was 'the most useful yet devised'.

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[105] T. Clouston, *Mental Diseases* (London, J. and A. Churchill, 1883), p.464.
[106] Skae, 'A Rational and Practical Classification', 309-19.
[107] See A. Beveridge, 'Thomas Clouston and the Edinburgh School of Psychiatry', in G. Berrios and H. Freeman (eds), *150 Years of British Psychiatry* (London, The Royal College of Psychiatrists, 1991), pp.370-1.
[108] *Ibid.*
[109] *Ibid.*

Clouston classified *syphilitic insanity*[110] into four chief forms:[111]

- *secondary syphilitic insanity* occurred during the second stage of the disease, was coincident with the eruption, curable and rare.
- *delusional syphilitic insanity* was due to slight brain starvation from an obscure syphilitic irritation that had become arrested. It consisted of a monomania of suspicion or of unseen agency, with hallucinations of the senses, and sensory perversions, but without motor symptoms, following at some distance of time an attack of syphilis in persons strongly predisposed to insanity.
- *vascular syphilitic insanity* depended on the tendency of the poison to affect the blood-vessels of the brain and cause slow arteritis, with diminished blood-carrying capacity and consequent slow starvation of the cerebral tissue.
- *syphilomatous insanity* depended on the tendency of the poison to affect the connective tissue, membranes, and bones, and caused pressure, irritation direct and reflex, and inflammation in the convolutions. Any cause of arteritis, tumour, pressure or irritation other than syphilis would probably produce somewhat the same mental symptoms. Out of 3145 cases admitted to the REA during the period from 1875 to 1883, Clouston diagnosed sixteen as being cases of syphilitic insanity, claiming:

> Few of these recovered, or are likely to recover, the majority of the patients being far advanced in their disease before admission, with serious involvement of the structure of the brain.[112]

In making his classification, however, Clouston spoke of the disadvantage he was under in having chiefly to do with the mental symptoms of brain syphilis, instead of treating the whole subject with its entire bodily and mental symptoms.[113] The symptoms of syphilitic insanity were seen as very difficult to distinguish from GPI. An Argyll-Robertson pupil was of less value as a diagnostic sign, for it occurred in both diseases, but optic neuritis would point to syphilitic disease, as it was not common in GPI. Tremors were seldom present in syphilitic insanity.

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[110] As chapter 7 will discuss, Clouston was one of many physicians of this period who was slow to acknowledge properly a link between syphilis and GPI.
[111] Clouston, *Mental Diseases*, pp.466-9.
[112] *Ibid.*, p.480.
[113] *Ibid.*, p.466.

Speech defects favoured GPI, as aphasic states were the only form of speech disorders met with in syphilitic insanity. The mental state of the syphilitic patient was usually one of depression with a tendency to become gradually weak-minded. The most important point that the literature stressed was that with anti-syphilitic treatment the patient often improved rapidly, whereas such treatment was valueless in GPI.[114]

Cerebral Syphilis

One of the clearest descriptions of *cerebral syphilis* - a manifestation of tertiary lesions in the brain or meninges - was provided in 1761 by Morgagni,[115] who described gummata of the brain as well as pathological lesions in the smaller arteries.[116] The symptomatology of cerebral syphilis was considered very characteristic, the most frequent physical symptoms being headaches, dizziness, vomiting, sleeplessness, cranial nerve palsies, optic neuritis, and hemiplegia. In addition to these physical symptoms, mental symptoms frequently developed. As a general rule the mental disturbance was acute in onset, characterised by a dull, delirious, or confused state, with disorientation, poor power of retention of recent impressions, and sometimes auditory and visual hallucinations.[117]

Cerebral syphilis did not appear as a diagnostic label in the Gartnavel Annual Reports and case notes until 1922, soon after Henderson had become Physician Superintendent. In this year, one patient was admitted to Gartnavel with this diagnosis. No other patient was admitted to any of my four asylum patient populations with this diagnosis. Henderson used the term to indicate syphilis affecting the interstitial tissues of the central nervous system, and accompanied by mental symptoms.[118] He differentiated three main types of cerebral syphilis -

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[114] M. Craig, *Psychological Medicine: A Manual on Mental Diseases for Practitioners and Students* (London, J. and A. Churchill, 1917), p.242.
[115] Giovanni Battista Morgagni (1682-1771) was Primary Professor of Anatomy at the University of Padua from 1715 until his death.
[116] Mackenzie, 'The Evaluation and Differentiation', p.1.
[117] D. Henderson, 'The Diagnosis of Cerebral Syphilis', *Review of Neurology and Psychiatry,* 9 (1911), p.242.
[118] Henderson and Gillespie, *A Textbook of Psychiatry*, p.314.

meningitis, endarteritis, and gumma. Symptoms involving the central nervous system usually appeared during the first five years after primary infection, and often within six months. Mental symptoms consisted of delirium, disorientation and memory defect for recent events, while emotionally the patient could undulate between being excited and irritable to expressing grandiose ideas and being euphoric. In terms of physical symptoms, eye symptoms were among the earliest and most characteristic, including blurring of vision, a squint and drooping eyelids. Convulsive attacks could also occur.[119]

Henderson presented a paper on cerebral syphilis in March 1922 to the New York Academy of Medicine.[120] He believed that, although this condition could easily be confused with GPI, one of the ways to differentiate it was that in cerebral syphilis a positive Wassermann reaction very rarely occurred in the spinal fluid, whereas in GPI the Wassermann reaction was present in the spinal fluid almost as often as the blood serum. However, Henderson also warned that the Wassermann reaction should be interpreted with caution and in the light of the whole clinical picture. The mental symptoms did not help materially in distinguishing certain cases of cerebral syphilis from GPI, and more reliance had to be placed on the physical signs. The presence of Argyll-Robertson pupils in cases of cerebral syphilis was comparatively rare, unlike in GPI. The speech defects had not the distinctive character of the articulation in GPI, and were more often associated with ordinary aphasia. Furthermore, the acute onset after syphilitic infection, and accompanied by headache and cranial nerve palsies, indicated an acute syphilitic process affecting the meninges rather than a parenchymatous disease.

Treatment, it was advised, should not differ in any way from the treatment of syphilis in general.[121] By the early 1920s, it was recognised that cerebral syphilis had a much more favourable prognosis with respect to duration and the self-supporting capacity and manageability of the victim.[122] The difference between diagnosing cerebral syphilis rather than GPI would thus be crucial to prognosis. Textbooks of the 1960s were, however, still lamenting the difficulties in

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[119] *Ibid.*
[120] Henderson, 'The Diagnosis of Cerebral Syphilis'.
[121] Henderson and Gillespie, *A Textbook of Psychiatry*, p.319.
[122] E. Southard and M. Jarrett, *The Kingdom of Evils* (London, Allen and Unwin, 1922), p.211.

distinguishing GPI from cerebral syphilis where severe mental changes were present, since the Wassermann reaction could be positive in both blood and cerebro-spinal fluid in both conditions. However, clinicians were by then able to rely on Lange's Gold Colloid Reaction in the spinal fluid, utilising a preparation of gold solution.[123]

Causation

The idea of a necessary and specific cause, generally considered to be essential if one is to have a defined disease entity, is largely absent from accounts of GPI and tabes in the nineteenth century. However much Bayle may have accomplished in detailing the clinical and pathological nature of *chronic arachnitis*, he did not commit himself as to aetiology. While in some of his cases, he spoke of venery and syphilitic disease, he offered these only in conjunction with other possible factors and laid no special emphasis on any one particular cause.[124] The causation of GPI gained a prominent place within the medical literature of the nineteenth and early-twentieth centuries, exciting passionate debate, possibly due to the fact that: 'Because of the uniform fatality of this prominent type of mental disease, the discussion of its etiological factors assumes the utmost importance.'[125]

Before the agreement that GPI was syphilitic in origin, numerous concepts were elaborated to explain the aetiology. These causes were usually considered in two groups, *moral* and *physical*. Under the moral group were included such factors as domestic trouble, worry, fright and love affairs. Austin stated moral causes – such as violent shocks to the mind and acutely painful impressions – to be the most frequent and usual causes.[126] The physical included sexual excesses, alcoholism, venereal disease, injury, starvation and over-exertion.[127] Due to the predominance of male paralytics, most nineteenth-century writers listed amongst its causes the

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[123] Henderson and Gillespie, *A Textbook of Psychiatry*, p.300.
[124] Moore and Solomon, 'Contributions of Haslam', p.830.
[125] A. Diefendorf, 'Etiology of Dementia Paralytica', *British Medical Journal*, 2 (1906), p.744.
[126] Austin, *On General Paralysis*, p.80.
[127] T. Tennent, 'An Investigation into the Value of Tryparsamide in the Treatment of General Paralysis of the Insane', M.D. thesis, University of Glasgow (1930), p.2.

influence of 'sex', without suspecting syphilis specifically. Likewise, 'venery' – not quite venereal disease as we understand it – was thought to be the prime cause of tabes.[128] Nineteenth-century authors often believed that occupations in life involving hardships, both mental and physical, favoured the onset of the illness, as well as the urban 'civilisation' in which they lived and worked. Writers made such general statements as:

> civilisation favours general paralysis through the demands which it makes on physical and mental powers, competition, reckless and feverish pursuit of wealth and social position, overstudy, overwork, unhygienic modes of life, the massing of people in large cities, the indulgence in tea, coffee, tobacco, stimulants, and social and sexual excesses, and artificial modes of life.[129]

The first important treatise dealing with syphilis as a cause of mental disturbance was probably that by the German researchers Esmarch and Jessen.[130] The aetiological importance of syphilis steadily gained recognition in the years following Kraepelin's 1904 statement that 'syphilitic infection is an essential for the later appearance of paresis',[131] and with Krafft-Ebing managing to inoculate general paralytics with the syphilis virus without infecting them. For decades, asylum pathologists had sought to discover the answer to GPI at post-mortem in the brain of its victims. The *spirochaete* was, instead, identified in the blood by two German laboratory researchers, Schaudinn and Hoffman (1905), who demonstrated the causal agent of syphilis to be a small spiral bacterial micro-organism known as the *Spirochaeta pallidum.*

The following year, August von Wassermann[132] discovered that in the blood of patients suffering from syphilis were changes detectable by laboratory methods. By this means it became possible to detect victims of syphilis, even when the disease

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[128] Schiller, 'Venery', p.1.
[129] T. Kellogg, *A Textbook of Mental Diseases for the Use of Students and Practitioners of Medicine* (London, J. and A. Churchill, 1897), p.657.
[130] Their contribution on syphilis and mental disturbance was published in 1857 in the *Allgemeine Zeitschrift fur Psychiatrie und Psychisch-Gerichtliche Medizin.*
[131] Zilboorg and Henry, *Clinical Lectures*, p.543.
[132] August von Wassermann (1866-1925) was educated in Germany and Austria, and was a student of the German bacteriologist Robert Koch. He taught at the University of Berlin (1902-1913) before becoming director of the Kaiser Wilhelm Institute for Experimental Therapy (1913-1925).

was quiescent and the patient symptomless. In 1906, Wassermann perfected and published his method of serum diagnosis. By means of the so-called Wassermann test, the diagnosis of syphilis in the secondary and tertiary stages, as well as of such 'parasyphilitic' affections as GPI and tabes, was arguably placed upon a much more certain basis, with physicians no longer reliant upon clinical observation. In 1907, Felix Plaut extended Wassermann's research further to the examination of the cerebro-spinal fluid. Chapter five explores the impact of such tests on the diagnosis and identity of neurosyphilis.

The final proof of syphilitic aetiology came six years later, in 1913, when Hideyo Noguchi demonstrated the presence of *Spirochaete pallida* in the brain of a patient who had died of GPI. Noguchi and Moore announced that in 14 out of 70 cases of GPI they had been able to demonstrate the *Treponema pallidum*, the spirochaete bacteria that they believed to produce syphilis, in the brain cortex. By 1913, it was therefore accepted that prior syphilitic infection was the necessary precursor of GPI, and it could be definitely stated: 'No syphilis, no paresis'.[133] Thus, 108 years after Esquirol's clinical description of the disease, conclusive proof was obtained that GPI was an organic disease of the brain caused by syphilis.[134]

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[133] Henderson and Gillespie, *A Textbook of Psychiatry*, p.290.

[134] However, among syphilitics, only a small proportion became a general paralytic, so the conundrum was hardly solved. For a more detailed discussion of aetiology, see chapter seven

Chapter Three: Institutional Provision for the Insane[1]

Provision for the Insane prior to 1857

The passing of the Poor Law Amendment (Scotland) Act in 1845 introduced 'a new concept' into local government. Previously, local government had been built on geographical grounds, with burghs and parishes operating according to the number and extent of population. The innovation was the establishment of directly elected bodies - parochial boards - dealing with the problem of pauperism, under the control of an external, central authority, the Board of Supervision. Hence, although the old burghal structures remained, a new one emerged. The line of demarcation was to be pauperism, with those falling below that line coming under the purview of the parochial boards and those above having their civic needs catered for by the burghal institutions. As far as Edinburgh and Glasgow were concerned, the new post-1845 parochial boards operated more or less within the geographical context of the pre-1845 parishes. Thus in Edinburgh the result was the establishment of the Canongate, St Cuthberts and St Giles parishes, while in Glasgow the four traditional parishes of City, Barony, Gorbals and Govan became the sites of four separate parochial boards. In respect to health care, the importance of these developments was that the new parochial boards were legally required to build poorhouses within their area of jurisdiction. The role of these poorhouses was not only to provide shelter for paupers, including insane paupers, but also to offer a modicum of medical care.[2]

There were seven basic types of institution into which the insane could be placed in Scotland prior to 1857.[3] The Royal Infirmary of Edinburgh opened in 1741 with purpose-built lunatic wards. In principle at least, both private (fee-paying) and

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[1] The history of psychiatry should not, of course, be equated with the history of confinement. Although this chapter is concerned primarily with the development of specialised institutions for the insane, the historiography of psychiatry is slowly beginning to emphasise levels of care and control outside these institutions, as well as the relationship between asylums and this outside world.

[2] A. Beveridge, 'Madness in Victorian Edinburgh: A Study of Patients Admitted to the Royal Edinburgh Asylum under Thomas Clouston, 1873-1908', *History of Psychiatry*, 6 (1995), p.167.

[3] F. Rice, 'Madness and Industrial Society: A Study of the Origins and Early Growth of the Organisation of Insanity in Nineteenth-Century Scotland, c.1830-1870', Ph.D. thesis, two volumes, University of Strathclyde (1981), p.237.

public (parish-supported) patients could also make use of the limited institutional provision provided by the chartered or 'Royal' asylums, or the pauper Lunatic Asylum at Elgin. In addition, both the fee-paying and in some cases the parish-supported patients could also seek help in one of the private institutions in existence. It is also probably safe to assume that there were some private licensed houses offering a rudimentary service in both Edinburgh and Glasgow towards the end of the eighteenth century. Prisons accepted both the dangerous and criminally insane, while there were also a number of schools for 'idiots'. The only other receptacle for the insane was, as mentioned above, the lunatic wards of the early poorhouses, the equivalent of the English workhouses. In 1857, there were 17 such poorhouses, accommodating over 800 patients. The poorhouse in Glasgow, the Towns Hospital in Clyde Street, opened in 1732; while in Edinburgh, the poorhouse was located in Teviot Row and opened in 1748. It was, in fact, principally because of the conditions pertaining in these poorhouses that the Edinburgh and Glasgow Chartered Asylums came into existence.

The Chartered Asylums

Although there was no statutory requirement in Scotland to provide institutional care for the insane until 1857, eight Royal asylums of philanthropic origins were founded between 1781 and 1839 (see **Figure 3.1**). While in England, public subscription asylums subsequently gave way to the county asylum provided for under the legislation of 1808 and 1845, the charitable institution remained predominant in Scotland. These Royal asylums provided the mainstay of Scottish provision for the insane in the first half of the nineteenth century, and were to remain as independent and essentially charitable institutions. However, as Houston points out, the actual funding of these asylums in their early years was predominantly from fees, making them in effect closer to the private, commercialised system that dominated in England.[4]

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[4] R. Houston, *Madness and Society in Eighteenth-Century Scotland* (Oxford, Clarendon Press, 2000), p.391.

Figure 3.1 The Chartered Asylums of Scotland

These asylums, constituted by Charter and Act of Parliament, were established in the following chronological order:[5]

1781 – Montrose Lunatic Asylum
1800 – Aberdeen Lunatic Asylum
1813 – Edinburgh Lunatic Asylum
1814 – Glasgow Asylum for Lunatics
1820 – Dundee Asylum for Lunatics
1827 – James Murray's Asylum for Lunatics (Perth)
1839 – Crichton Institution for Lunatics

These seven Royal asylums were run by gifts and subscriptions as public charitable subscription institutions. The involvement of the Scottish urban middle class was crucial to the development of these charitable institutions in a way that was less apparent in the case of the English asylums. Only the Crichton Royal and James Murray asylums were endowed by individual philanthropists. The Royal asylums at Aberdeen, Dundee, Edinburgh, Glasgow and Montrose were all reliant upon the support of the public in both a financial and organisational capacity. Annual reports had a readership far wider than the asylums themselves, and were vital in encouraging subscriptions and public interest in these institutions. These reports were thus crucial to the financial, as well as the medical, well-being of the asylums. A charity had to be seen to be accountable and successful in 'value for money' terms, and thus the charitable asylum followed a rather broader agenda than that of a purely medical or custodial facility,[6] by incorporating such elements as patient employment into its regular regime.

[5] The original title of each Royal asylum is given here, although institutions will forthwith be referred to as they were known in the period *after* 1880.
[6] L. Walsh, 'The Property of the Whole Community: Charity and Insanity in Urban Scotland: The Dundee Royal Lunatic Asylum, 1805-1850', in J. Melling and B. Forsythe (eds), *Insanity, Institutions and Society 1800-1914* (London and New York, Routledge, 1999), pp.183-6.

As charitable foundations, the Royal asylums had, as an early ideal, the provision of aid to the needy and less well off. However, in practice, all seven institutions diversified into providing service for the middle-class insane. With less enthusiasm, they also contracted with the local parochial authorities to receive many of their pauper insane, in a period before district and parochial asylums were widespread. These asylums thus offered a dual, class-demarcated service: on the one hand, there was the 'private' fee-paying service, which was itself rigorously divided into expensive provision for the upper classes and a much less costly option for the 'middling sort'; and on the other, the pauper service where the board and maintenance of rate-aided patients were paid by the local authority. Inevitably the quality and type of service differed with the fee. Very comfortable havens were created for the middle class in co-existence with the practice of 'psychiatry for the poor'. Hence the class division noted in so much of the organisation of insanity in Victorian Britain was readily seen in both cities.[7]

Royal Edinburgh Asylum

The Chartered Asylum of Edinburgh was opened in 1813, and by the second half of the nineteenth century was considered to be Scotland's premier asylum. Its foundation was reputedly triggered by the death in Bedlam of the poet Robert Ferguson at the age of 24. His medical attendant, Dr. Andrew Duncan, was so moved by the poet's plight that he resolved to found a hospital in Edinburgh specifically for the mentally ill. However, it was not until 1792, many years after Ferguson's death, that a circular was issued by the Lord Provost of Edinburgh and other individuals in the city, inviting subscriptions. The opening sentence of this circular announced that the proposal arose out of the difficulties experienced by the medical practitioners of Edinburgh in the treatment of persons deprived of reason.[8] Erected out of voluntary contributions from the public, the Asylum was originally

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[7] Rice, 'Madness and Industrial Society', p.414.
[8] A. Mitchell, 'Memorandum on the Position of the Royal Edinburgh Asylum for the Insane', 1882, Lothian Health Services Archive GD16, p.9.

intended to provide for all classes in society, although for the first three decades of its existence it accepted only paying patients, much to the annoyance of many local citizens who felt it should provide for all. Eventually, in 1842, the Institution became the Royal Edinburgh Asylum (REA), and in 1844 it received the inmates of the charity workhouse.

A number of factors distinguished Edinburgh from the other Royal Asylums.[9] It was planned not only as Edinburgh's asylum but also as the Scottish national institution for the insane: 'The very basis and leading principle of the Institution is that it shall be open to patients from every part of Scotland.'[10] However, in practice, this role proved to be more of an ideal than a reality. Secondly, the REA appears to have suffered initially from more serious financial difficulties than the other institutions, primarily because of the tardiness of the citizens of Edinburgh in supporting the scheme. The relative speed and financial success with which Glaswegians established their Chartered Asylum were not matched by the citizens of Edinburgh. Whereas the Glaswegian Asylum took only six years from conception to completion of the project, the Edinburgh Asylum took twenty-one years. Glasgow was also more successful in raising funding, attracting £15,541.18.11 in half the time it took Edinburgh to raise £7,500, of which £2,000 was public money.[11] Thirdly, the only national legislative involvement in, and public funds granted to, the Chartered asylums related to Edinburgh. Finally, unlike the other asylums, the managers at Edinburgh so successfully diversified into the upper end of the private market that they neglected the pauper insane until thirty years after opening.[12]

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[9] *Ibid.*, pp.250-1.
[10] *24th Royal Edinburgh Asylum Annual Report*, 1836, Lothian Health Services Archive LHB7/7/4, p.6.
[11] Rice, 'Madness and Industrial Society', p.378.
[12] In 1948, the REA came under the direction of the Board of Management of the Royal Edinburgh and Associated Hospitals, after which it continued to develop to meet demand. The Andrew Duncan Clinic opened in 1965, the Young People's Unit and Alcohol Problems Unit in 1968, and the Jardine Clinic in 1982.

Glasgow Royal Asylum

Before 1814 there was no dedicated institution for the insane in Glasgow. The mentally ill of the city were housed in cells in its poorhouse, the Town's Hospital, where there was no attempt at treatment. One of the directors of this Institution, Robert McNair of Belvidere, proposed in 1804 that a hospital should be set up specifically for the care of the insane. The Asylum of Glasgow was completed in 1814 in Parliamentary Road. It was built to William Stark's[13] panopticon design, allowing total observation of patients (see **Appendix 8** for plan of Asylum design). It opened to wide public interest and acclaim, its siting and design very much inspired by the philosophy of 'Moral Management' pioneered by the Tukes at the Retreat. The decision to leave Stark's Asylum was mainly due to overcrowding and the growth of the City, and the need for the Asylum to expand to cope with increasing demand. A country setting was held as the ideal. Furthermore, the Panopticon was no longer regarded as the ideal modern style.[14] Thus, in 1843, the Asylum relocated to its present site and buildings at Gartnavel, by which name it became known.[15]

Scottish Lunacy Legislation

As **Figure 3.2** shows, throughout the eighteenth and early-nineteenth centuries, almost each decade witnessed new legislation relating to lunacy in Scotland. The most important of these were those of 1857 and 1913, discussed more fully below.

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[13] William Stark came from Dunfermline, Scotland. He had, by 1814, established a great reputation as an architect, although he had never before designed a hospital or asylum. His reputation rested on such buildings as the interior of Glasgow Cathedral, the old Hunterian Museum, and St. George's Tron Church.

[14] J. Andrews and I. Smith (eds), *'Let There be Light Again': A History of Gartnavel Royal Hospital from its Beginnings to the Present Day* (Glasgow, Gartnavel, 1993), p.30.

[15] Construction of the adjacent Gartnavel General Hospital commenced in 1968 and, as a result, some of the mental hospital's sports and recreational facilities were lost. After Gartnavel's transfer to the National Health Service, it continued to have a substantial proportion of paying patients. A psycho-geriatric unit was established in 1972.

Figure 3.2 Scottish Lunacy Legislation

1815	Madhouses (Scotland) Act
1828	Madhouses Amendment (Scotland) Act
1841	Madhouses Amendment (Scotland) Act
1857	Lunacy (Scotland) Act
1858	Lunacy (Scotland) Amendment Act
1862	Further Provision for Lunacy (Scotland) Act
1866	Lunacy (Scotland) Act
1867	Lunacy Certificates (Scotland) Act
1887	Lunacy Districts (Scotland) Act
1913	Mental Deficiency and Lunacy (Scotland) Act
1919	Nurses Registration (Scotland) Act
1929	Local Government (Scotland) Act

Lunacy (Scotland) Act, 1857

Certification

The 1855-7 Scottish Lunacy Commission enquiry, which highlighted the deplorable situation in which many pauper lunatics were kept, was responded to with a determination to take legislative action. The primary outcome was the Lunacy (Scotland) Act, 1857. Under this Act the certification of insane patients was altered. Previously only one certificate from a medical man was required for committal. However, following the 1857 Act, two medical certificates were required for an asylum admission, the physicians having to examine the patient separately, receiving a fee for their service. Also required was a petition, which in the case of pauper patients was completed by the Inspector of the Poor, and in the case of private patients was completed by a relative or other person who had to state his relationship to the patient. The two medical certificates and petition were sent to the Sheriff who decided if the petition should be granted. Provision was also made for a Certificate of

Emergency, which could be used if there was unnecessary delay in obtaining a Sheriff. This required only one medical certificate and allowed for three days' detention.

The Scottish law differed from the English one in several respects. First, the decision whether to grant the order was a legal one and was made by the Sheriff. Secondly, in Scotland the procedure for certification was essentially the same for private and pauper patients, whereas in England the two classes were treated differently. Thirdly, the English system placed no limit on the length of detention, whereas in Scotland the order ran out after three years. It was only renewed if the asylum Superintendent, who had to renew it annually thereafter, made specific application. Finally, the Superintendent had the power to discharge immediately any patient who he considered to be sane without having to go through cumbersome administrative channels.[16]

Most private patients were committed by their families, although the rich could of course choose to keep insane family members at home in specially prepared rooms for safety and comfort. On the other hand, charity cases were committed by the Inspector of Poor from their respective parishes. Many were also transferred directly from Edinburgh or Glasgow Royal Infirmary wards, once their conduct had proved impossible to control. The majority of patients were certified and compulsorily detained under the Scottish Lunacy Act. Thus their admission to these asylums had been against their will, an important factor to bear in mind. Only 26 neurosyphilitic patients of the 911 in my study were voluntary admissions.[17]

Although the majority of patients were certified and compulsorily detained, the REA and Gartnavel Directors claimed that they were admitting a few voluntary patients according to the provisions of the 1841 Madhouses (Scotland) Act. This was despite the fact that the voluntary status of asylum patients had not yet been recognised by any law. Voluntary admissions were not formally sanctioned by lunacy legislation until 1862, and required formal certification until 1866, when legislation dispensed with the requirement in Scotland for any medical certificate or

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[16] Beveridge, 'Madness in Victorian Edinburgh', p.24.

[17] That is, 12 from Gartnavel and 14 from the REA. No voluntary neurosyphilitic patients were admitted to either Rosslynlee or Woodilee in the period from 1880 to 1930.

shrieval warrant whatsoever for such admissions, in favour of a written sanction from a single Commissioner. By the later nineteenth century, the principle of voluntary admission was being strongly encouraged, with full backing being given to this voluntary system by the Lunacy Board in 1898. The Commissioners, Asylum Directors and Medical Officers interpreted the growth of voluntary admissions optimistically as a sign of the growing confidence of the community in the asylum and in the benefits of early treatment. George Robertson stated that:

> An arrangement is made with every Voluntary Patient on admission that he can leave at any time on giving three days' notice of his intention to do so, and this honourable understanding is kept, except under the most grave and exceptional circumstances.[18]

Despite this, many voluntary patients who gave their statutory three days notice that they desired to quit the asylum had their attempts frustrated. Voluntary patients could be retained in the asylum by simply being re-categorised as certified patients.[19] Furthermore, there were no separate wards for those who came voluntarily.

Voluntary admissions only really began to enter the asylums in more substantial numbers after 1890. From this date onwards patients were admitted voluntarily, subject to the authorisation of the Lunacy Board and by arrangement with the Physician Superintendent. In fact the great expansion of voluntary admissions has undoubtedly been one of the major changes in twentieth-century mental hospital policy. In 1907, Landel Oswald lamented that it was not sufficiently well known that voluntary patients were admitted to any asylum on making application by letter to the Board of Lunacy, with neither medical certificates nor Sheriff's order being required.[20] By the 1920s, he was drawing attention in his Annual Reports to the importance of early treatment - he saw the relatively straightforward procedure of voluntary admission as favourable to encouraging early treatment. And in 1923, Glasgow Physician Superintendent David Henderson proudly announced that the number of voluntary patients admitted in that year to

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[18] *117th Royal Edinburgh Asylum Annual Report*, 1929, LHB7/7/14, p.9.
[19] Andrews and Smith, *'Let There be Light Again'*, p.104.
[20] *95th Glasgow Royal Asylum Annual Report*, 1907, GGHB13B/2/223, p.18.

Gartnavel was fifty-three, a figure approximately half the admission rate.[21] By 1930, as many as 20 per cent of admissions to the REA were voluntary, since 170 voluntary and 677 certified patients were resident.

The system of voluntary admissions provided an alternative to an often protracted bureaucratic admission process that proved distressing to many patients and their relatives. Voluntary admission usually required the patient to simply write to the Physician Superintendent requesting admission. A typical letter in 1915 read: 'Dear Doctor, I am not feeling well and wish to be admitted.' By 1920 this letter had become a proforma at the REA, written in the admitting doctor's hand, while by 1925 it was a printed letter on hospital notepaper, with a space for patients to sign so authorising their admission.[22] In England, on the other hand, voluntary admissions were restricted to patients who had already been confined during the previous five years. Voluntary admission to a public mental hospital was not fully sanctioned by English law until 1930.[23]

Another type of twentieth-century admission is also worthy of mention, the 'service patient'. Those soldiers and sailors awarded a disability pension as a result of service in the First World War who entered an asylum and whose mental illness was thought to have been caused or aggravated by War Service were classified as Service patients. The Ministry of Pensions paid their maintenance cost at the weekly pauper rate, plus a sum per week for clothing and lodging.[24] These patients were classed as Private patients. They tended to get extras in the way of food, tobacco and cigarettes, and they wore clothes specially made for them. In addition to these provisions, the Ministry of Pensions paid subsistence allowances to the dependants of service patients similar to the allowances paid in the case of dependants of men on active service.[25] Of my sample, only 19 patients were noted to be service admissions, but there were undoubtedly more than this, whose case notes simply do not note this fact as there was no space on the proforma for such information.

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[21] *111th Glasgow Royal Asylum Annual Report*, 1923, GGHB13B/2/224, p.19.
[22] Andrews and Smith, *'Let There be Light Again'*, p.62.
[23] *Ibid.*, p.104.
[24] *Barony Parochial Asylum Annual Report*, 1917, GGHB30/2/20ii, p.10.
[25] *4th Board of Control for Scotland Annual Report*, 1917, GGHB13B/14/70, p.xxvi.

Lunacy Districts

The 1857 Act also provided for the division of the country into 'lunacy districts' in which district asylums were, if need be, to be built. Scotland was divided into 27 lunacy districts, which comprised groups of counties, single counties or single parishes. Local authorities were to form themselves into District Boards of Lunacy, and their officials were to assume responsibility for the care of all insane persons within their district. The District Boards were to ensure that asylums were erected within their area and were responsible for their management. Royal asylums remained independent. Parish authorities were instructed to send all insane patients to asylums unless a Commissioner had approved their continued residence elsewhere. Control of the insane poor was removed from the Board of Supervision. The Commission had highlighted the apathy and, in many cases, neglect of parish officials concerning the welfare of their pauper insane. This removal of autonomy, and the extensive powers granted to the Commissioners, created lasting resentment from the Board of Supervision, with relations between the two Boards remaining uneasy throughout the nineteenth century.[26]

General Board of Commissioners in Lunacy

The final provision of the 1857 Act was the creation of the General Board of Commissioners in Lunacy for Scotland. Before the passing of this Act, the Shrievalty had been the major invigilators in the supervision of provision for the insane in Scotland. Sheriffs had not only been responsible for the licensing and inspection of the asylums in their districts, but also for making rules and regulations for the management of asylums, the issue and verification of warrants for the committal of pauper lunatics to asylums, and the liberation of improperly detained lunatics. Membership of the new Board of Commissioners was small, consisting initially of an

[26] H. Sturdy, 'Boarding-Out the Insane, 1857-1913: A Study of the Scottish System', Ph.D. thesis, University of Glasgow (1996), p.58.

unpaid Chairman, two paid Medical Commissioners (Coxe[27] and Browne[28]), and not more than three other unpaid Legal Commissioners. The Chairman was generally an experienced politician with no real experience of lunacy administration. Additionally, there were to be two paid Deputy Medical Commissioners (Mitchell[29] and Cockburn[30]), a Secretary, and a Clerk to the General Board. This Board comprised a body of professional men, not all medical - its composition was an occasionally uncomfortable partnership of medical men, lawyers and administrators. Professional knowledge of insanity was not amongst the credentials of any of the six men appointed as unpaid Chairmen between 1857 and 1909.[31] Chairmen were, however, little more than figureheads. It was medical men and lawyers who dominated the Board, and it was the salaried Medical and Deputy Commissioners who did the bulk of the Board's work.

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[27] James Coxe (1811-1878) graduated from the University of Edinburgh in 1835. Throughout his career, he gave special attention to the study of the physiology and pathology of mind. His uncles were the famous Edinburgh phrenologists and physiologists, Andrew and George Combe. However, it was not until the appointment in 1855 of a Royal Commission to inquire into the management of the insane in Scotland that Coxe became actively engaged in this branch of medicine himself. He received his knighthood in 1863 in recognition of the work he had done for the insane poor. He was instrumental in starting the *Edinburgh Medical Journal,* and a Fellow of the Royal Society of Edinburgh.

[28] William Alexander Francis Browne (1805-1885) qualified in medicine at the University of Edinburgh in 1826. While in Edinburgh, he became interested in phrenology and became a follower of George Combe. After travelling the Continent, he returned to Scotland to practice medicine in Stirling, before accepting medical superintendency of the Sunnyside Royal in Montrose. Here he put into practice his theories on the humane care and treatment of the insane. In 1837, he published *What Asylums Were, Are and Ought to Be.* Two years later, Browne became the first resident physician and Medical Superintendent of the Crichton Royal, Dumfries. Remaining in this position for 18 years, he established a substantial reputation for the Crichton as a centre of psychiatric excellence for the humane care of the insane. In 1857, Browne was appointed a Commissioner in Lunacy for Scotland, retiring in 1870.

[29] Arthur Mitchell graduated from the University of Aberdeen in medicine. Before his 1857 appointment as Deputy Commissioner in Lunacy, Mitchell had gathered little direct experience of insanity. After spending some time in private practice in Glasgow, and serving as a surgeon to the Glasgow Lock Hospital, his career was interrupted by a period of failing health and recuperation in Algiers. In 1870, he became a Commissioner, and from that time until his retirement in 1895 he supported and encouraged medical superintendents and their staff in the asylums of Scotland. He was the recipient from Queen Victoria of the Order of Companion of the Bath in 1886, and was made a Knight Commander in 1887, on account of his distinguished public service. He died in 1909.

[30] Archibald William Cockburn gained his M.D. from St. Andrews in 1842, having previously obtained the F.R.C.S. (Ed) in 1838. He held various posts during his career, including Surgeon to the Royal Dispensary of Edinburgh, House Surgeon to the Royal Infirmary of Edinburgh, and Visiting Physician to Whitchurch Asylum in Herefordshire.

[31] J. Andrews, *"They're in the Trade ... of Lunacy, They 'cannot interfere' – they say": The Scottish Lunacy Commissioners and Lunacy Reform in Nineteenth-Century Scotland* (London, Wellcome Institute for the History of Medicine, 1998), p.10.

The powers of the General Board of Commissioners included:[32]

(a) The superintendence, management, direction, and regulation of all matters arising in relation to lunatics; to public, private, and district asylums and to every house in which a lunatic was kept or detained under order of the sheriff.

(b) The granting, recalling or refusing of licences to the proprietors of private asylums.

(c) The making and enforcing of rules and regulations for the good order and management of all private and district asylums and for the conduct of their officers and servants.

(d) The making and enforcing of the rules and regulations in relation to the books at each asylum; and to the returns of the entries therefrom to be made to the General Board.

(e) The regulation of the visitation and inspection of asylums and houses – to be made twice yearly by the paid commissioners, who were to make entries in the *Patients' Book*, to be kept in each asylum or house recording the condition of the patients and details of any coercion or restraint imposed on any lunatic.

(f) The visitation of houses, private houses, prisons and poorhouses detaining lunatics or alleged lunatics.

(g) The institution of inquiries and the summoning and examination on oath of witnesses.

The establishment of a central Lunacy Board 'saw the injection of co-ordination and continuity to a system that had formerly been too dependent on the variable initiative of the Shrievalty and rotating medical inspectors'.[33] The Scottish Commissioners had the power to manage and regulate the provision and care of all registered insane patients. To facilitate this, they established a system of regular visitation to institutions for the insane and to private dwellings. While English Commissioners' visits were limited to asylums, workhouses and prisons, the responsibilities of Scottish Commissioners extended to all provision, institutional or otherwise, for the pauper insane, thus into every parish and house where pauper lunatics were kept. Commissioners responsible for different regions inspected the

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[32] Lunacy (Scotland) Act, clause XVII.

[33] Andrews, *"They're in the Trade ... of Lunacy"*, p.28.

asylums of Scotland twice a year, whereas in England it was only once a year. Scotland's peripatetic Lunacy Commissioners covered the length and breadth of the land, investigating every Royal, district and private asylum, and every 'cottage' dwelling in which an insane person was housed. The Commissioners conducted visitations and wrote the majority of the Board's Annual Reports, while the responsibilities of the Deputy Commissioners tended to be mainly confined to visiting, making recommendations concerning, and reporting on, single patients. Detailed accounts documented these visits made by the Commissioners and Deputy Commissioners across the country during the year, as well as their assessment of boarding out. Although the Commissioners' work was primarily supervisory, the visits were extensive and thorough, as the lengthy annual returns indicate. These included detailed statistics of the number, location, classification and treatment of patients. Furthermore, the Board had a direct relationship with the patients. Despite the strict control and censorship which asylums could exercise over patients' letters to relatives or others outside the institution, any letters written to the Board had to be sent straight to them without any interference by the asylum staff.

In 1858, there were ten officials supervising a total of approximately 10,000 patients. This contrasted favourably with the English Board of Lunacy, which had six officials responsible for overseeing the condition of 82,600 patients.[34] And yet, as Andrews points out, the small size of the Scottish Board seems to have assisted in encouraging cohesion and unity amongst its members, thus avoiding the cliques and factions that existed south of the border. Scottish Commissioners also tended to stay in post for slightly longer than the English Commissioners.[35] The duty of the Board was to ensure that, as far as possible, Scotland had a lunacy system that provided for patients according to their individual requirements. They investigated complaints and sanctioned the admission of patients into institutions or private dwellings. They had the power to order district lunacy boards to provide asylums and to grant or withdraw licenses for private madhouses, parochial asylums and lunatic wards of poorhouses.

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[34] Sturdy, 'Boarding-Out', p.266.
[35] Andrews, *"They're in the Trade ... of Lunacy"*, p.12.

However, there were limitations to the Board's authority over single patients. As far as private lunatics were concerned, the Scottish Commissioners had no automatic authority unless the lunatic was placed in an asylum. A further grievance was the failure of proprietors, guardians, families and officials to report such cases and to acknowledge adequately what constituted genuine coercion or restraint. The Board was also severely restricted in practical terms as to what it could do about cases of neglect and maltreatment of single patients. Commissioners' recommendations could be ignored, or only partially implemented. These limits to their powers were a matter of regular complaint from the Commissioners. Clause XXII of the Act provided that after five years the General Board would cease to exist. The paid Commissioners were to become Inspectors-General in Lunacy for Scotland, exercising all the powers of the General Board except the granting of licenses, which was to become the duty of the sheriff. Despite attempts by parochial officials to ensure that clause XXII was upheld, the Board of Lunacy was in fact retained in its original form until 1913. The Board retained the same structure for 56 years, being replaced in 1913 by the Board of Control.[36]

Results of the Act

The reformers of 1857 seem to have had ambitious intentions. The previously random and haphazard methods were replaced by a national, rationalised structure. The poorhouses were granted licenses from the Board of Lunacy for the reception solely of harmless patients not amenable to curative treatment. However, the Board viewed them with disfavour, regarding them as of merely temporary utility until district asylums were erected and able to accommodate all insane pauper patients. Poorhouses and private madhouses were to be phased out of lunacy organisation, and the Royal asylums to reduce their pauper patients in order to develop their private elite service. The 1857 Act led to marked growth in asylum provision, on a similar scale to that implemented over a decade earlier in England and Wales. Before this

[36] In turn, the Mental Welfare Commission replaced this in 1960. Consisting of a far larger group of officials, while retaining the same responsibilities, their power and influence was to diminish.

legislation, provision for the insane in early-nineteenth century Scotland had been wholly inadequate for the growing demands of the population. However, within ten years of the passage of the Act, available repositories for the insane of all social classes included not only the royal asylums, but a steadily developing network of district asylums, a small number of parochial asylums, licensed wards in poorhouses for the reception of pauper lunatics, as well as Baldovan, in Dundee, the Royal Scottish National Institution, Larbert, and the Lunatic Department at Perth Prison. While not seeking to get rid of all licensed houses and lunatic wards of parishes, the Scottish Lunacy Board did want to replace them to a significant extent with public and district asylums. By 1913, less than a fifteenth of patients registered with the Board were in poorhouses or private asylums, whereas at mid-century the proportion had been nearly half.[37]

It should, however, be recognised that not all provision for the insane was institution-based.[38] The pioneering policy of boarding out harmless, chronic insane patients in the community was formally introduced by the Scottish Board of Lunacy in 1858, following the passage of the 1857 Act. Up to 25 per cent of registered pauper and private patients were boarded out under the terms of this Act. In the early years of the system, a large proportion of those boarded out were congenitally weak-minded idiots and imbeciles, residing with their relatives. As the system developed, an increasing number of patients suffering from acquired forms of insanity, having reached a quiescent stage, were discharged unrecovered from asylums to private dwellings. Generally, such patients were placed under the care of strangers. The system was firmly endorsed by the Scottish Commissioners in Lunacy, who advocated its widespread adoption throughout the country. It should, however, be pointed out that despite official encouragement, boarding out came under occasional attack from certain medical and parish officials and from the general public.[39]

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[37] J. Andrews, 'Raising the Tone of Asylumdom: Maintaining and Expelling Pauper Lunatics at the Glasgow Royal Asylum in the Nineteenth Century', in Melling and Forsythe, *Insanity, Institutions and Society*, p.202.

[38] Harriet Sturdy's Ph.D. thesis 'Boarding-Out' comprehensively addressed this deficiency in the historiography.

[39] Sturdy, 'Boarding-Out', abstract.

The practice of boarding out was to become well established in Scotland, and was one of the unique features of Scottish lunacy provisions.[40] Woodilee had one of the most active records for boarding out, reflecting widespread acceptance and enthusiasm for the system. In 1886, it was noted at Woodilee that an unusually large number of patients, 76 (of 535 patients resident that year), had been boarded out. However, Midlothian and Peebles District Asylum had only a very small number of patients boarded out annually. It is essential not to over-emphasize the importance of this innovation in *all* Scottish asylums. It is not, for example, an explanation for the slow growth of the district asylums. Officials from the large urban parishes of Edinburgh and Glasgow were consistently the most active and enthusiastic at boarding out, even though access to asylums was comparatively easy in these regions. While almost 50 per cent of patients in the Highland regions were boarded out in 1895, and 42 per cent in Edinburgh (although this fell in subsequent years), in most other urban locations the proportion was under 10 per cent. By 1899, 22 per cent of all pauper patients in Scotland were provided for in this way.[41] The distinctive feature of the Scottish system of boarding out was the degree of formal, centralised control exercised by the Commissioners. Each Deputy Commissioner was responsible for visiting patients in private dwellings in one half of the country, seeing and assessing as many as 1000 patients a year.[42] Despite close imitation of the system in other parts of the world, the extent of control enforced in Scotland was not replicated elsewhere. And despite the importance of boarding out as a policy, it never became a feasible alternative to institutional confinement for the majority of Scotland's insane, and the asylum populations continued to grow.

Another link between patient and community was the concept of 'probation'. Many asylums which boarded out incurable cases also resorted to this related system of discharge on probation, as a means of testing the fitness of patients for their suitability to be cared for in private dwellings. Pauper lunatics discharged on probation were to be visited once every three months by a medical man appointed by

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[40] It should, however, be noted that this system is irrelevant to my sample of patients, who were in most cases too advanced in their incapacity, physically and/or mentally, to be allowed out of the institutions. I found no cases of neurosyphilis who were boarded out during the period from 1880 to 1930.

[41] Sturdy, 'Boarding-Out', pp.209-10.

[42] *Ibid.*, p.267.

the Parish Council, and once every six months by the Inspector of Poor. By 1865, the Commissioners were commenting on the success of discharging patients while retaining their names on the asylum register, thereby facilitating an uncomplicated return to the asylum if necessary.[43] Clouston justified this policy at the REA by arguing that easy re-admission was offered if patients fell into crisis. A more limited system of discharge on probation was in operation at Woodilee Asylum, where patients were tested for suitability for domestic care while remaining within the confines of the asylum. Patients who were doubtful subjects for boarding out were given a trial by living in Asylum farms and homes before being sent from the Asylum. It is evident that the employment of some form of probation complemented and, in many cases, facilitated the successful adoption of discharge to private dwellings from asylums. Medical Superintendents who had doubts about the safety and applicability of the boarding out system found a compromise solution in the use of discharge on probation.

Provision for the insane by 1857

Geographically the names of the Chartered asylums indicate that they were well situated to serve the needs of town dwellers. In fact, all the Royal asylums, 20 of the 23 private houses, and 15 of the 23 poorhouses, were situated in urban areas. Lanarkshire, a thriving industrial region for manufacturing, mining and agricultural activity, contained nearly a quarter of the population of Scotland.[44] It was well provided with institutional accommodation, the great majority of its pauper lunatics being boarded in asylums, although the district also boarded out. Glasgow had seven institutions, wholly or in part for the insane at this time – a Royal asylum, three poorhouses, and three private madhouses. However, the greatest concentration of institutions was in the Edinburgh area, with one Royal Asylum, three poorhouses, fifteen private madhouses, and a school for idiots.[45]

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[43] *7th Commissioners of Lunacy for Scotland Annual Report*, 1865, GGHB13B/14/54.
[44] Sturdy, 'Boarding-Out', p.218.
[45] Rice, 'Madness and Industrial Society', p.240.

The Scottish Royal asylums had no parallel in England and Wales. In Scotland, the free trade in lunacy was never practised on such a scale as in England and Wales, and the district asylums (the Scottish equivalent of the English county asylums) belong essentially to the last quarter of the nineteenth century. Parry-Jones defined private madhouses as 'privately owned establishments for the reception and care of insane persons, conducted as a business proposition for the personal profit of the proprietors'. In England and Wales, the extensive spread of these houses can primarily be explained by the slow growth of public institutional support for the insane. In Scotland the evidence points to there being a much more circumscribed pattern of development. The private madhouses were by 1857 serving as a limited alternative to the Royal asylums.[46] There were also fundamental differences between England and Scotland in both the timing and type of provision developed for the pauper insane. The apparatus that came with the 1857 Act, in particular the establishment of a Lunacy Commission and the compulsion for district asylums, came twelve years after the English Lunacy Act. As a combined result of this new Scottish legislation, spiralling costs of pauper maintenance in Chartered asylums, a growing recognition of a perceived or potential increase in pauper lunacy, and the persistent badgering of the Scottish Lunacy Commission, things were to change quite rapidly after mid-century. By 1913, less than 7 per cent of registered pauper lunatics were in poorhouses or private asylums whereas at mid-century the proportion had been nearly half. Unquestionably, this represented a major change in lunacy administration, witnessing a massive increase in the numbers of pauper patients being incarcerated, as well as a substantial erosion of resistance on the part of parochial authorities and the family to the asylum solution.[47]

Development of Parochial and District Asylums

By the 1840s, some of the chartered asylums had already begun making provisions for paupers to be housed in new and separate buildings. This included the REA,

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[46] *Ibid.*, p.267.
[47] Andrews, 'Raising the Tone', p.202.

which opened its West House in 1842 to complement its East House, where only the private fee-payers resided. However, some Royals reverted to being largely private institutions. For example, all Murray Royal paupers chargeable to the local Perth area were transferred to Murthly District Asylum when it opened in 1864. Others, like the Crichton, opened a separate Southern Counties Asylum building on its site in 1849, but it still ran both departments very much as a single institution.[48]

Local authorities had not quickly or uniformly taken up the invitation furnished by the 1857 Act to provide accommodation for all their pauper insane, but rather required cajoling by the Lunacy Commission. They continued to shunt their pauper insane from one institution to another in search of the cheapest rates. Even in counties supporting very few pauper lunatics, Commissioners still grumbled about the expense. Despite compulsory requirements set out in the Lunacy Acts for the setting up of district asylums, many local Scottish authorities remained unwilling to foot the bill well into the late-nineteenth century. In the West of Scotland, it was not until after 1870 that most local authorities began to establish their own asylums, six parochial and district asylums being established in the area during the period from 1873 to 1897.

District asylums were public institutions erected and managed by the District Boards of Lunacy, and they were intended for the reception of pauper patients in localities where such provision was not otherwise available. The only public asylum existing before 1857, at Elgin, received recognition as a district asylum, and institutions were opened in the 1860s in Lochgilphead, Argyll, Perth, Inverness, Banff, Fife, Haddington, Ayr and Stirling. Over the next ten years, district asylums were erected in Roxburgh and Midlothian. In the early-twentieth century, district asylums were established in Dundee, Aberdeen, Edinburgh, Renfrew and Paisley.

The three main parishes in Glasgow (City, Barony and Govan) each had their own poorhouse, with the insane comprising a large portion of the inmates. Following the 1857 Act, these institutions required to be officially designated as fit for the care of the insane and to be subject to inspection by the Lunacy

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[48] M. Barfoot, 'Love's Labours Lost: The Work, Exercise and Health of Pauper Inmates of Nineteenth Century Scottish Asylums', Scottish Labour History Society, Edinburgh, 1997, unpublished conference paper, p.7.

Commissioners. At the same time, Glasgow lunacy district ordered the provision of greatly increased accommodation for their pauper insane. Parochial asylums were erected out of taxes levied upon parishes. They were managed by parochial boards, but licensed by the Board of Lunacy. Viewed as the equivalent of the lunatic wards of poorhouses, they received paupers suffering from all forms and degrees of insanity.[49] The need for new buildings was slow to be acknowledged by these parishes, but eventually had to be faced. Barony Parochial Lunatic Asylum opened in 1875. Langdales was bought by the City Parish and became Glasgow District Asylum in 1881, being replaced by Gartloch Hospital in 1897. The Govan District Asylum at Hawkhead opened in 1895. An additional district asylum was established in Glasgow in 1898, when the former Barony parochial asylum at Woodilee, came under the control of the District Lunacy Boards.

Meanwhile, one of the eight districts into which Scotland was divided by the 1857 Act was the Edinburgh District, comprising the counties of Edinburgh, Haddington, Berwick, Linlithgow, Roxburgh, Selkirk, Peebles, and Orkney. However, in 1870, after an application by the Prison Boards of Edinburgh and Peebles, the General Board sanctioned the division of the Edinburgh and Peebles District into two parts. One was to consist of the parishes of the City, St. Cuthbert's, Canongate, North Leith, South Leith, and Duddingston; and the other to consist of the remaining parishes of the counties of Midlothian and Peebles.[50] It was for the benefit of the latter counties that the Midlothian and Peebles District Asylum was opened at Rosewell in 1874. **Figure 3.3** charts the name changes to the four asylums studied here.

By 1901, only three private madhouses remained, as compared with ten in 1870. However, the Board had failed in their ambition of removing the parochial element of lunacy care. A total of sixteen poorhouses operating with lunatic wards were recorded in 1901. It should also be noted that the number of insane cared for domestically still remained high, being numerically the third highest category, or 17.57 per cent of the total in 1901.[51] Furthermore, parochial institutions:

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[49] Sturdy, 'Boarding-Out', pp.14-5.
[50] Mitchell, 'Memorandum', p.35.
[51] Rice, 'Madness and Industrial Society', p.363.

> were very much at the bottom of the heap of asylumdom, viewed by [chartered asylum] alienists as establishments appropriate primarily for chronic patients, and as custodial centres rather than as offering facilities for initiatives in clinical research and practice.[52]

Figure 3.3 Subsequent Name Changes to the Four Asylums

Edinburgh Lunatic Asylum -

1840: Royal Edinburgh Lunatic Asylum

1842: Royal Edinburgh Asylum

1920: Royal Edinburgh Mental Hospital

1928: Royal Edinburgh Hospital for Mental and Nervous Disorders.

Glasgow Asylum for Lunatics -

1824: Glasgow Royal Asylum for Lunatics

1931: Glasgow Royal Mental Hospital

1963: Gartnavel Royal Hospital

Midlothian and Peebles District Asylum -

1916: Midlothian and Peebles District Asylum, Rosslynlee

Barony Parochial Lunatic Asylum, Woodilee -

1901: Glasgow District Asylum, Woodilee

1908: Glasgow District Mental Hospital, Woodilee

Barony Parochial Asylum, Woodilee

In 1869, the Barony Parochial Board set up a special committee to examine the problem of its inadequate provision for the insane. In 1870, the Board presented their findings, proposing an asylum for 400 inmates which could be expanded to take 600. They recommended a farm asylum outside the urban area, within easy reach of a railway and with good drainage and water supplies. Another consideration was that it would be cheaper if it was located in the country. The Board approved and the

[52] J. Andrews, 'A Failure to Flourish? David Yellowlees and the Glasgow School of Psychiatry', *History of Psychiatry*, 8 (1997), p.189.

Committee set about finding a suitable site, of which Woodilee was the favourite. By March 1871 they had their estate. When the Barony Parochial Asylum at Woodilee, Lenzie, opened in 1875, it was the largest parish asylum in Scotland with 400 patients. Some 70 patients were transferred from Gartnavel, although this went only a little way to relieving the overcrowding of that institution. The Board's problems were not yet over, however. Glasgow had been growing steadily up to the 1870s, but the years that followed saw a more rapid expansion in the city's industrial development and with it a population explosion. Forty years after the asylum opened it had expanded from 400 beds to 1300.[53]

The status of the Asylum was changing too. Barony and City Parishes became separate Lunacy Districts in 1887, with responsibility to provide care for the insane in their areas. Barony was already doing this at Woodilee but the City Parish had to build a new asylum at Gartloch, which was opened in 1897. A year later, the Barony and Glasgow City Parochial Boards were amalgamated and both Woodilee and Gartloch became Glasgow District Asylums, coming under the control of the new Glasgow District Lunacy Board. A home for imbecile children was opened adjacent to the female (west) wing in 1900, with accommodation for 35 children, the first in Scotland to be built in connection with an asylum. In 1929, the Local Government Act swept away the old Poor Law provisions and much of the old terminology. As a result, Woodilee Asylum became a Glasgow Corporation Hospital, by which time it had been expanded to accommodate 1,300 patients.[54]

Midlothian and Peebles District Asylum

The Midlothian and Peebles District Board of Lunacy experienced considerable difficulty in finding a site suitable to the requirements of a County Asylum at a moderate price. Of those placed at their disposal, they finally selected a piece of land on the Whitehill Estate, which combined the advantages of a central situation

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[53] G. Hutton, *Woodilee Hospital, 125 Years* (Glasgow, Greater Glasgow Health Board, 1997), p.14.
[54] In 1948, Woodilee became an NHS hospital under the Board of Management for Glasgow North Eastern Mental Hospital. A large part of the hospital was evacuated following the discovery of severe

within the district, isolation from the village population, and proximity to a railway station, Rosslynlee. The grounds were of 40 acres, acquired at a feu-duty of £4 per acre.[55]

The Midlothian and Peebles District Asylum (Rosslynlee) was built to provide treatment for all pauper patients from those parishes of the county not included in the Urban District of Edinburgh. The Institution was opened for the reception of patients in 1874, in which year 51 patients were admitted, mostly transferred from the REA. A lodge at the entrance was used for the reception of patients and housed ten, and the Institution provided accommodation in all for 230 patients. A few years later, extra cottages were built for married members of the Staff, and at the same time further additions made to the farm buildings. The extent of ground belonging to the Asylum at this time was about 40 acres, with another 70 acres leased shortly afterwards.[56]

Mental Deficiency and Lunacy (Scotland) Act, 1913

By 1913, there were seven Royal asylums, twenty-one district asylums, one parochial asylum and three private madhouses. Further, 14 poorhouses were licensed to receive lunatics. Although not distributed evenly, there was a network of institutions across Scotland receiving both pauper and private patients.[57] Originally the care and treatment of Lunatics and Mental Defectives was the central responsibility of the Board of Supervision. Although mental deficiency, or idiocy, had been distinguished from lunacy in law as early as the thirteenth century, not until

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structural defects in the fabric of the buildings in 1987. The hospital closed in 1995, and the building is now in a ruinous state.

[55] *1st Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1871, LHB33/2/1, p.4.

[56] *41st Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1925, LHB33/2/2, p.14. At the time of writing, Rosslynlee continues to serve as the basis for in-patient mental health treatment for Midlothian (catchment 80-85,000), principally in the areas of acute general psychiatry, rehabilitation psychiatry, elderly assessment psychiatry, and elderly NHS continuing care. Currently, the hospital has accommodation for 125 patients, contrasting with a population of several hundreds forty years ago. There has recently been a proposal to relocate provision currently sited on Rosslynlee within a new Midlothian Community Hospital. This is currently at a fairly advanced stage of negotiation, but is not expected to open before 2003/4. Once it does, Rosslynlee will close.

[57] Sturdy, 'Boarding-Out', p.17.

the nineteenth century did specialised provision appear,[58] with the distinction between mental deficiency and lunacy recognised in the 1886 Idiots Act. In 1904, the appointment of a Royal Commission on the Care and Control of the Feeble-Minded reflected a growing concern that many of the nation's social ills could be attributed to mental deficiency for which existing provisions were inadequate.[59]

The legislation of this period must be contextualised within contemporary concerns, with mental defectives becoming linked to the public debate about the health and efficiency of the nation. By the turn of the century, theories of degeneration and eugenics were growing in popularity as an explanation for the existence of social failures in a supposedly prosperous society. Mental deficiency moved beyond nineteenth-century conceptions of idiocy, which had referred to a numerically small group of people whose mental and physical abnormalities made them easy to distinguish from the 'healthy' population. Mental defectives were now becoming identified with the 'undeserving' poor, in particular the long-term unemployed, drunkards, unmarried mothers, and criminals. At a time when rejected British Boer War recruits epitomised the physical and mental deterioration of the nation and the ability of the race to cope with advance, eugenics provided a scientific explanation for this national decline, as well as fuelling Britain's insecurity about its position as an economic and military power. Chapter seven locates aetiological discussions of neurosyphilis within these debates.

The 1913 Mental Deficiency Act was important because it set up a new system of care, and mass segregation, for mental defectives. Four grades of mental deficiency were defined – idiots, imbeciles, feeble-minded persons, and moral imbeciles.[60] The Act also introduced a new government department – the Board of Control – to administer all mental health care. The General Board of Commissioners in Lunacy survived until 1913 when, by this Act, it was renamed the General Board of Control for Scotland. Regarding mental deficiency, the Commissioners of the Board of Control were responsible for the 'general supervision, protection and

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[58] M. Thomson, *The Problem of Mental Deficiency: Eugenics, Demography and Social Policy in Britain, c.1870-1959* (Oxford, Clarendon Press, 1998), p.10.
[59] *Ibid,* p.23.
[60] Mental Deficiency and Lunacy (Scotland) Act, part I, 1.

control' of all defectives;[61] for the supervision of local authorities in the exercise of their powers under this Act; for the approval and inspection of all institutions for defectives; for all institutions to be visited once a year by the Commissioners, a second visit to be made either by the Commissioners or their inspectors; and every defective under guardianship twice a year by the Commissioners or their inspectors.[62]

Institutional Profiles

REA

In the original proposal of 1792 for the REA, it was stated not only that the institution would provide for those who could 'pay for their maintenance and treatment in the Asylum', but also that 'poor patients should be received into the Asylum'.[63] However, at the Asylum's opening in 1813, the Managers wrote that because of lack of funds, they had been unable to extend the blessings of the Institution to the 'indigent'. Instead, middle-class patients were admitted at three guineas a week. On a number of subsequent occasions, the Managers expressed their concern at the exclusive nature of their service. However, it was in fact not until 1828 that the lower class of private patient was admitted, while the pauper insane had to wait until 1842 before they were admitted following the opening of a 'West House'. When the REA management finally agreed to admit paupers, they built this new structure as the pauper depository for about 500 persons, while the original building, then known as the 'East House', was reserved for about 60 private patients. Throughout his tenure, Clouston pressed for more pauper insane facilities, such as more lunatic wards in the City's poorhouse to cater for the chronic but harmless lunatics, for the boarding out of suitable patients, and for the erection of a new district asylum. This request was realised with the opening of a new pauper asylum

[61] *Ibid.*, part III, 24.
[62] *Ibid.*, part III, 25.
[63] Rice, 'Madness and Society', p.380.

at Bangour in 1906.

Admissions to the REA show that the vast majority of pauper inmates were from within a twenty-mile radius of the capital. Many had travelled or worked elsewhere, but Scottish Lunacy and Poor Laws forced indigent individuals back to their parish of birth for support. A mere handful were born in England, Ireland or Wales. There were also some foreign inmates from, for example, Spain and Russia. These rare admissions caused considerable consternation, principally because of language difficulties. As far as private patients were concerned, however, the Directors were fairly unconcerned about place of origin. East House inmates thus came from a much wider geographic distribution than their West House cohorts did, with only 26 per cent being Edinburgh-born.[64] Furthermore, the REA contracted to receive the insane of the Orkney Islands. The high proportion of patients from these Islands who came to be resident in West House arose from an agreement made in 1842 with Mr. Balfour of Trinsby, Orkney, whereby in return for his own donation of £200 and two others of £150 and £50, the asylum would receive 'all the insane poor of Orkney for ever, to be maintained at the lowest rate of Board'.[65] This agreement remained operative for many years longer than it would otherwise have done, because no district asylum was available to the parish authorities of Orkney.[66] This relationship with Orkney must also be seen within the context of Edinburgh's claim to function as the national institution for the insane in Scotland. The link thus forged between the REA and the Orkney Islands was further strengthened in 1873 when Clouston became Physician Superintendent. Clouston was born on Orkney in 1840, into a family whose heritage stretched back twenty-four generations.

In 1858, as a result of the 1857 Act, the REA began to serve as a district asylum in name and to receive the pauper lunatics of the district, which at that time included not only the urban parishes of Edinburgh but also the parishes of Midlothian and Peebleshire. The Act created a dilemma for institutions like the REA. On the one hand, Clouston sought to create and maintain an institution that was

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[64] M. Thompson, 'The Mad, the Bad and the Sad: Psychiatric Care in the Royal Edinburgh Asylum (Morningside), 1813-1894', Ph.D. thesis, Boston University Graduate School (1984), p.243.
[65] E. Catford, 'Draft History of the Royal Edinburgh Hospital, 1774 to 1856', LHSA GD12/1, p.63.
[66] Unfortunately, such patients had to endure the 'tempestuous and distressing' journey by ship from Kirkwall to Leith, according to David Henderson (*The Evolution of Psychiatry in Scotland*, p.149).

attractive, curative and progressive enough to attract private paying patients, who had to be attracted from comfortable homes by convincing relatives of the superiority of his medical regime. Simultaneously, he was obliged to fulfil society's legal mandate to treat pauper lunatics. However, the opening in 1874 of the District Asylum at Roslynlee led to the removal of all pauper patients belonging to Midlothian and Peebles. The six remaining urban parishes were the City, St. Cuthbert's, Canongate, North and South Leith and Duddingston, as well as the parish of Orkney. From 1874 onwards, the number of pauper lunatics sent to the Asylum from the six urban parishes greatly increased. This perturbed Clouston and the Managers of the Asylum, as the rising numbers of pauper patients compelled them to refuse admission to many private patients, almost entirely belonging to the 'poorer middle class of society'. The last quarter of the nineteenth century witnessed increasing battles between the parish boards, who insisted on their right to send all their pauper lunatics to the Asylum, and the Managers of the Asylum, who tried to limit the numbers to enable them to admit those middle-class patients with limited finances.

The history of Clouston's tenure as Physician Superintendent is essentially that of a struggle to achieve success at juggling conflicting social, class and economic pressures. Clouston saw himself in a bind, unwilling to have his Asylum become a dumping ground for an ever-increasing number of ageing paupers, many of whom were considered incurable in addition to being malnourished, debilitated, and consequently in need of extra nursing care and better diet.[67] His enduring concern was always for the respectable, industrious middle class. The necessity to woo more wealthy inmates was largely responsible for the conception and building of Craig House in 1894. The REA thereafter consisted of two divisions, West House and Craig House. West House catered for the rate-aided patients from Edinburgh and the Orkney Islands, their fees paid for by the parish of their birth, and for private patients who could afford only very limited fees. Some of them also received financial assistance from the Asylum charity fund, started in the 1850s to help impoverished middle-class, genteel individuals avoid the stigma of pauperism. Craig House offered accommodation for private patients only, whose rates of board were on a

[67] Thompson, 'The Mad, the Bad and the Sad', p.93.

sliding scale according to income. The REA was thus a public institution that reflected the Scottish class system and its social inequalities.

The divisions between private and pauper patients in Victorian asylums like the REA was a reflection of the outside world, rather than something peculiar to asylums. Segregation by class was not only advocated by officials and administrators, but was called for by many patients and their families – although predictably usually by those of private means rather than by those on parish rates. Accommodating the genteel in inferior situations, it was believed, would offend their own feelings and those of their families, and retard their recovery. Contemporaries also emphasised that association with the pauper ranks would expose the elite to the shock and infectious influence of bad habits and manners. Thus these asylums made special arrangements for their private patients. Such conceptualisations must have chimed in with wider concerns in late-Victorian society over the preservation of bourgeois values against the threat of the unruly poor, over hygiene and sanitation in fast growing urban areas, and over the advancing spectres of 'degeneration' and hereditary taint.[68]

There was a strict class demarcation in the facilities offered by the REA. The Asylum's extensive Gheel model, which emulated the best features of the famous and controversial Belgian village where the insane were cared for in a home-like atmosphere, comprised elegant homes and villas exclusively for wealthy private patients. As well as being segregated by their social class, asylum inmates were also divided by gender and by the severity of their mental disorder. Thus men and women occupied separate quarters in the wards or 'galleries', as they were called, and patients could move up or down the hierarchy of galleries, depending on how disturbed they were. Meal times provided a forum where patients could mix however, and the various Asylum functions, such as dances and day trips, enabled an even greater mingling of inmates because they were usually open to both West and East Houses. However, pauper patients were easily identifiable, as they were

[68] Andrews, 'Raising the Tone', p.218.

compelled to wear the asylum-issue pauper uniforms, whereas private patients were allowed to wear their own clothes.[69]

The Asylum day followed a predictable timetable of early rising, eating, exercise and early to bed.[70] Great stress was also put on the therapeutic value of work, with staff expected not only to teach and encourage patients to work, but also to work alongside them and set an example. Work was the lynch-pin of Clouston's treatment 'to divert the mind from morbid thoughts while self-control is practised, and tidiness of dress cultivated'.[71] Under him, as many as three-quarters of the pauper patients were employed,[72] although this therapy was not deemed appropriate for private patients.

The idea of work as effective treatment was far from new. Pinel, Tuke, and Esquirol were all advocating the use of work in the care of the insane at the end of the eighteenth century.[73] In Scotland, work had been used as a form of therapy in the Charity Workhouse 'Bedlam' from the 1830s. The 1853 Report of the Commissioners in Lunacy made it clear how important work was to the asylum authorities, and how the asylum population was constructed as a community of the impaired, as opposed to people who, as sick, could withdraw from social responsibilities. The Commissioners condemned the:

> unnecessary expense of laying out airing courts, levelling off rough ground, formation of slopes … before the asylum is completed, when all these operations … can be far more usefully and effectively undertaken after the asylum has been for some time opened … by male patients, whose own almost unassisted labour may carry out and complete them at much smaller expense.[74]

There is clearly the element of economic value here. The ability to perform routinised work-tasks was deemed essential for an inmate to be discharged, just as a

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[69] A. Beveridge, 'Life in the Asylum: Patients' Letters from Morningside, 1873-1908', *History of Psychiatry*, 9 (1998), p.433.
[70] *Ibid.*, p.438.
[71] *73rd Royal Edinburgh Asylum Annual Report*, 1885, LHB7/7/9, p.18.
[72] As the report by Arthur Mitchell (Commissioner in Lunacy) points out in the *Annual Report of the Royal Edinburgh Asylum*, 1881, 74 per cent of pauper patients were regularly engaged in useful work.
[73] D. Bennett, 'Work and Occupation for the Mentally Ill', in H. Freeman and G. Berrios (eds), *150 Years of British Psychiatry, volume two: The Aftermath* (London, Athlone, 1996), p.193.
[74] Cited in L. Ray, 'Models of Madness in Victorian Asylum Practice', *European Journal of Sociology*, 22 (1981), pp.256-7.

disability to work could become a reason for initial committal to the Institution.[75] In short, as Arthur Mitchell, Commissioner in Lunacy, stated: 'It is scarcely possible to over-estimate the value of work as a means of treatment.'[76] There are parallels to be made here with the Scottish lock wards and Magdalene asylums, which utilised means of penal incarceration and labour for the surveillance and regulation of female morality and sexuality.[77]

Asylum inmates worked the normal industrial hours that they would have worked outside. McKinnon, the first Physician Superintendent of the REA, was innovative in encouraging patients to pursue the occupation they had been following prior to their admission. Pursuits such as carpentry, tailoring, book-binding, shoe-making and printing were offered. Manual labour was felt to be extremely useful in the treatment of patients from the poorer classes of society. Male patients thus stoked boilers, baked bread, made clothes and shoes, or helped tradesmen maintain the buildings; while female patients cleaned the wards, staff quarters, doctor's houses and the nurses' home, or helped in the stores, kitchen or laundry, where washing tubs were preferred to labour-saving machinery. All clothes, sheets, towels, tablecloths and curtains that the Asylum needed could be made by patients. Routine chores were done by inmates, many of whom had been domestic servants, which incidentally kept down public costs and pleased the taxpayer. Clouston rated the therapeutic benefits of physical labour very highly, and he lamented that private patients, by virtue of their class, could not be set to work as well.[78] And yet, even rich male patients were occasionally coaxed into pushing wheelbarrows in the Asylum's gardens. However, if a wealthy inmate recognised that such labour was inappropriate for a person of his station, the 'valuable' therapy ceased.[79] Thus it can be seen that work within the Asylum was in line with class and gender norms in the outside world.

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[75] *Ibid.*, p.257.
[76] *69th Royal Edinburgh Asylum Annual Report*, 1881, LHB7/7/8, p.53.
[77] The first of these institutions to be founded in Scotland was in Edinburgh in 1797, followed by Glasgow in 1815. See L. Mahood, *The Magdalenes: Prostitution in the Nineteenth Century* (London and New York, Routledge, 1990).
[78] Beveridge, 'Life in the Asylum', p.432.
[79] M. Thompson, 'The Wages of Sin: The Problem of Alcoholism and General Paralysis in Nineteenth-Century Edinburgh', in W. Bynum, R. Porter and M. Shepherd (eds), *The Anatomy of Madness: The Asylum and Psychiatry*, volume three (London and New York, Routledge, 1988), p.123.

The farms and gardens provided further means of employment. All seven Chartered Asylums put their varying acres of land to productive use. One of the Board of Lunacy's top priorities, when looking for a site to build new asylums, was enough land for a farm. The Report of the Royal Commission of 1857 referred to the necessity to have land for the employment of patients. It reported that:

> there is no reason why Asylums should not profitably employ patients in the cultivation of land sufficient both to supply the direct wants of the house and even to grow produce for sale.[80]

Asylums of this period had their own farms and gardens, producing large quantities of produce. Clouston believed outdoor labour to be especially valuable in enabling patients to sleep without sedation by tiring them out and discouraging incoherent thought.

There is no evidence that such bodily exercise actually improved health, much less promoted recovery, although it was interpreted in this way by such Edinburgh alienists as Clouston and Robertson. However, at the practical day-to-day level, patients' willingness to work seems not only to have been interpreted by the physicians in terms of how well they were responding to moral therapy, but how effectively they could be managed and accommodated into the often labour-intensive daily routine of asylum life.[81] Work may have helped patients to accept their new institutionalised lives more easily, as well as aiding the finances of the institution. 'Sinecures' were created by Clouston to provide suitable encouragement to employment. Payment was given, usually in the form of tobacco, sweets or money.[82]

The more serious aspect of work was somewhat offset by the participation of both patients and staff in games and social events. 'Amusement' was generally deemed valuable as a therapeutic tool and was taken very seriously. That is, equally important to Clouston's 'gospel of work' was his 'gospel of play'. REA patients had the opportunity to learn how to dance, play billiards, bowls, cricket, tennis, curling, cards, dominoes, chess and draughts. Additionally, community volunteers provided

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[80] *16th Board of Control for Scotland Annual Report*, 1929, GGHB13B/14/71, p.viii.
[81] Barfoot, 'Love's Labours Lost', p.12.
[82] Thompson, 'The Mad, the Bad and the Sad', p.123.

concerts, lectures, poetry readings and balls. Weekly dances were held in the East and West Houses for both sexes. As Thompson points out, this is ironic since such activities would have been frowned upon in the outside world of Calvinist Scotland.[83] Patients could also relax in their day rooms, with a selection of books, magazines and newspapers to read. The gentlemen depended chiefly on amusements for their distraction, finding other activities unsuited to their station. Board games and writing to the superintendent were popular pastimes for them. Indoor games were as popular as they were in society outside the Asylum, particularly with the gentlemen patients, the most notable being bagatelle, backgammon, billiards, and whist.

Finally within the Asylum regime came religion. Religious worship was accorded an essential place in the system of 'moral therapy' practised at most asylums,[84] with most institutions appointing their own Chaplain. The 1836 REA Annual Report states that:

> the experiment, which has been made, of having divine worship performed in the Asylum on Sunday forenoons, appears to have been attended with good effects; nearly 20 of the patients are generally able to attend; and although it cannot be supposed that they are all able to understand what is said, their demeanour is, in general, quiet and composed, and they seem sensible of the solemnity and sacredness of the service.[85]

The REA had a chaplain throughout the period from 1880 to 1930.

No differences of any real significance can be detected in the staffing structure of the two Royal Asylum regimes. There were two distinct groups, the Directorate and the Officers, although in Edinburgh the former were called 'Managers'. However, these Managers were subject to a higher authority, known as the Guardians. These gentlemen, holding 'the most important offices of state about Edinburgh', exercised a general superintendence over the whole operation.[86] The Scottish asylums were initially dominated by lay, rather than medical, influence and

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[83] *Ibid.*, p.124.
[84] Andrews and Smith, *'Let There be Light Again'*, p.18.
[85] *24th Royal Edinburgh Asylum Annual Report*, 1836, LHB7/7/4, p.23.
[86] Rice, 'Madness and Industrial Society', p380.

control. Few Directors were medical men. The majority were drawn from influential sectors of the town's hierarchy, including the town council, the guildry and the church. The REA Managers included representatives of civic and mercantile interests, medical professionals, and representatives of the subscribers, and met monthly. At these meetings, the annual election of office-bearers and sub-committees was discharged, rules enacted for the government of the Institution, appointments satisfied, and the general business attended to. Early each year, the Asylum held their annual general meeting, at which most contributors could attend and to which an Annual Report was presented.[87]

FIGURE 3.4 Physician Superintendents of the REA

W. McKinnon	1839-1846
D. Skae	1846-1873
T. Clouston	1873-1907
G. M. Robertson	1907-1932
D. K. Henderson	1932-1955

Very much in the tradition of eighteenth-century asylums and madhouses, six of the seven Royal asylums[88] had no resident physician when first founded, their medical regime being appointed in a visiting capacity.[89] During the early years, the REA was run by a lay superintendent and a matron, with physicians merely visiting to give patients medical attention. However, as the nineteenth century wore on, the extent and quality of medical supervision in the Royal asylums improved. The daily medical supervision was initially in the hands of the Superintendent whose work the Physician inspected, but the 1830s saw almost all the Royals equip themselves with fully-paid, full-time resident physician superintendents.[90] In Edinburgh, this major organisational shift occurred in 1839. **Figure 3.4** provides an overview of all

[87] *Ibid.*
[88] Crichton Royal being the exception.
[89] Andrews and Smith, *'Let There be Light Again'*, p.52.
[90] Rice, 'Madness and Industrial Society', p.486.

physician superintendents serving the REA from its founding to the mid-twentieth century. **Appendix 9** elaborates on the most significant of these individuals within the period from 1880 to 1930, compiling comprehensive biographical details of each.

The superintendent's nursing functions were transferred to a new officer, the steward, and his administrative tasks were transferred to the physician, creating this new full-time medical-administrative post of physician superintendent.[91] The first appointment in Scotland was probably that of Alexander Macintosh at Dundee in 1833, followed the next year by W. A. F. Browne at Montrose. The first occupant of the post at Edinburgh was William McKinnon. The Physician Superintendent took on an increasingly omnipotent role as the century unfolded. Clouston was a formidable physician superintendent who inspired respect and admiration during his lengthy period in the post. He made a daily tour of the Asylum and endeavoured to speak with every inmate, although the growth in patient numbers must have rendered these exchanges very brief. Clouston was the supreme commander of an army of Asylum staff who were responsible for maintaining the efficient running of the Institution.[92]

The post of Assistant Medical Superintendent held the responsibilities of assisting the Physician Superintendent in his medical and administrative duties, visiting every division, as well as performing any medical duties required for the efficient treatment of the patients. In the absence of the Physician Superintendent, he was to take charge of the asylum.[93] The REA had the post of Assistant Physician(s) from pre-1880, which was held by between three and five people annually. In 1923, the additional post of Deputy Physician Superintendent appeared, with W. M. McAlister, Lecturer in Psychiatry at the University of Edinburgh and later Physician Consultant in Psychiatry, Edinburgh Royal Infirmary, appointed to the post.

In the early-nineteenth century, responsibility for the daily operations of the asylums fell to the Officers, the Physician, Superintendent, Secretary/Treasurer and Matron.[94] The Secretary served as the chief clerical officer. As the scale of the

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[91] *Ibid.*, p.380.
[92] Beveridge, 'Life in the Asylum', p.432.
[93] 'Regulations for the Guidance of Officials of the Glasgow District Asylum at Woodilee, Lenzie', 1900, GGHB30/8/3, p.4.
[94] Andrews and Smith, *'Let There be Light Again'*, p.4.

Asylum's operations grew during the century, so also did the number of medical assistants and the ancillary staff associated with such institutions: keepers, porters, cooks, technicians, housemaids and laundresses. The REA East and West Houses each had a head male attendant and a matron, who supervised the day-to-day running of the Institution and reported back to Clouston. Junior medical staff and attendants resided in the Institution and were expected to participate in all asylum activities, acting as role models 'of social decorum and moral probity to the inmates'.[95]

Asylum nurses and attendants were long seen as being the lowest rung of the nursing profession. Standards of asylum nursing were impoverished by the numerical levels of attendance, the poor character of many employees and the difficulty of finding better candidates for the job.[96] The job of 'keeper' or 'attendant' was long regarded as the lowliest amongst asylum staff, often attracting undesirable and ill-motivated candidates. Attendants worked long hours, living with their charges both night and day under the same roof. They were not well paid, had few holidays and were only allowed to marry with the permission of the Superintendent. The attendants were drawn in the main from the working classes. Keepers' duties were mostly menial and domestic in nature. Much emphasis was placed on keeping a vigilant eye on patients and preventing, or rapidly quelling, agitation and disturbance. Not until the 1870s did the Physician Superintendents really begin to advocate any more structured on-site training for attendants. In 1870, some female nurses were instructed in the use of the catheter. The kind of training on offer in the asylums at this time, however, was merely informal and *ad hoc.*[97]

While many of the men who took charge of the Royal asylums during the nineteenth century played a merely routine role, there were notable exceptions.[98] The REA produced some of the most prominent and successful of Britain's nineteenth and early twentieth-century alienists. The 'Edinburgh School' has been portrayed as a thriving site of psychiatry, from the courses offered by Alexander Morison through to David Skae, and the ultimate integration of psychiatric teaching into the

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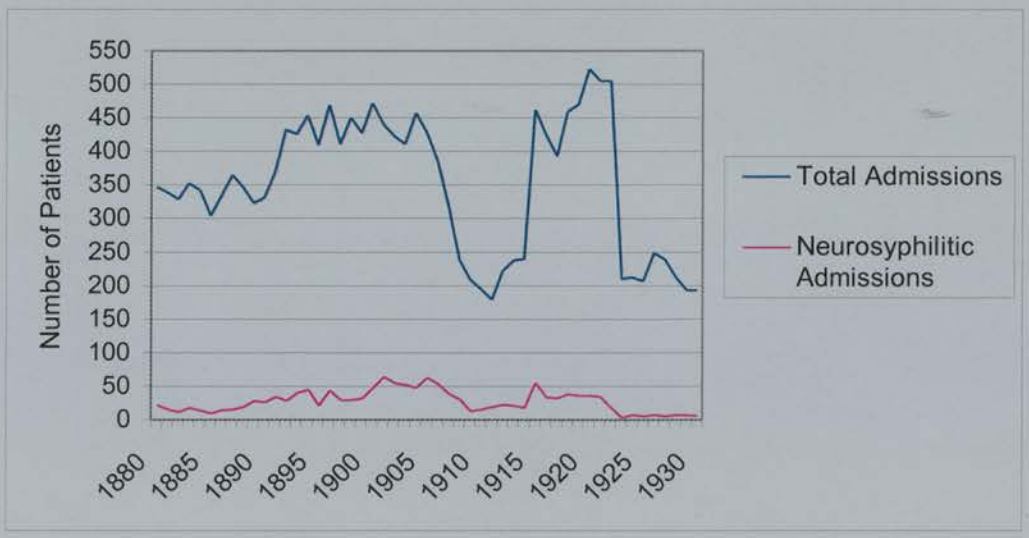
[95] Beveridge, 'Life in the Asylum', pp.432-3.
[96] Andrews and Smith, *'Let There be Light Again'*, p.85.
[97] *Ibid.*, p.86.
[98] Rice, 'Madness and Industrial Society', p.486.

University Medical Faculty with Clouston's appointment as Lecturer on Mental Diseases in 1879. Even of those men who did not make Physician Superintendent, some went on to positions of prominence. John Sibbald served a short period in private practice before becoming Assistant Physician under Skae at the REA, and Physician Superintendent at Argyll and Bute District Asylum (1862-1870), and then Deputy Commissioner in Lunacy (1870-1878) and Commissioner in Lunacy (1878-1899). He was knighted in 1899. John Macpherson served as Senior Assistant Physician at the REA, then house surgeon at the Northern Infirmary, Inverness, and Physician Superintendent at Stirling District Asylum, before becoming lecturer on mental diseases at the Royal School of Medicine, Edinburgh. He then became Deputy Commissioner (1900-1909) and President of the MPA in 1910.

Figure 3.5 Admissions to the REA, 1880-1930



Source: *Royal Edinburgh Asylum Annual Reports*, 1880-1930, LHB7/7/8-14.

In terms of demography, by the 1880s the Asylum had grown in numbers from its original intake of 6 patients to an impressive institution housing over 1000 from all social classes. **Figure 3.5** charts the total number of admissions to the Asylum over the period from 1880 to 1930, as well as the number of specifically

neurosyphilitic admissions.[99] Over this fifty-year period, there was a steady rise in admissions to the Asylum, except in 1907 and 1923, when the admissions dramatically dropped, and 1915, when admissions rose significantly. The 1907 drop was largely due to the transfer of a large number of the rate-paid patients to the District Asylum at Bangour. The 1915 rise in admissions was as a result of an arrangement that the REA entered into with the District Board of Control, whereby Bangour Asylum patients were temporarily housed in the REA's West House while Bangour was taken over by the War Office as a Military Hospital. Furthermore, all new cases from Edinburgh were admitted direct to the REA, this arrangement amounting to an increased admission rate of 177 patients for that year.[100] The 1923 drop in admissions was due to the ending of this arrangement with the District Board of Control, thus returning the Bangour patients at the end of the war period. The period between 1880 and 1930 sees REA total admissions fluctuate widely between 179 and 523, and neurosyphilitic admissions between 4 and 65, with neurosyphilitics constituting an average of eight per cent of the total admissions over the period.

Gartnavel

Although little difficulty was encountered in raising the substantial funds needed to finance Gartnavel's erection, the prevailing conviction was that the Institution would soon become financially self-sufficient. Unfortunately, however, this was not to be the case. During the eighty years of its existence, the Asylum was intermittently in debt, with the Directors repeatedly resorting to raising loans to meet their ambitious building programme. Throughout this period, the Asylum's Annual Reports are full of apologetic and frustrated explanations for the renovation and building projects which had to be delayed or forgone as a result of this indebtedness. By the third quarter of the nineteenth century, however, the debt engendered by this building had slowly declined, falling rapidly thereafter until the Directors declared by the end of the 1870s that the debt was 'extinguished'. With the elimination of the debt, the

[99] These figures are given in the Annual Reports, of which there is a complete run over this period.
[100] *103rd Royal Edinburgh Asylum Annual Report*, 1915, LHB7/7/13, p.2.

Asylum entered a period of financial prosperity that lasted for the next half century. This prosperity was further enhanced by the Asylum's vigorous policy of reducing the number of pauper patients coming from adjacent parishes, which will be discussed below. The Asylum was so far in credit as to be able to expend large sums on renovations and improvements. These included new boundary walls, dining halls, bathrooms, offices, a cottage for patients suffering from infectious diseases, a lodge and entrance gate, and the complete installation of electric lighting, as well as the creation of a Reserve Fund to meet emergencies and pensions. This prosperous state of affairs lasted until the 1930s, during which decade the excess of income over expenditure was rapidly eroded.[101]

Unlike its Edinburgh counterpart, Gartnavel was willing to accommodate pauper patients from the outset. However, under David Yellowlees, Physician Superintendent from 1874 until 1901, Gartnavel gradually discharged all its pauper patients, transferring them to the new district and parochial asylums. The ideal asylum for Yellowlees would be small, allowing the medical attendant to have individual knowledge of his patients. Thus, in 1879, Gartnavel gave notice to the District Board that they wished to end the agreement concerning the admission and treatment of district patients, hoping that the chronic parish patients would be removed to their own district asylums, which were being constructed in this period. Yellowlees, arguing in 1880 for the removal of pauper patients from the Asylum, had this to say:

> Of the 283 Pauper Patients resident at [this year's] close very few indeed present any reasonable hope of Recovery. The Institution, doubtless, affords them a safe and comfortable Home, but unfortunately their presence excludes the *new and curable cases* constantly arising in this class of the community, and thus tends to lessen, as regards *Pauper* Patients, the real usefulness of the Asylum as a place of *cure*.[102]

Yellowlees stated that 'the removal of the Parish Patients tends to raise the social tone of the Institution',[103] but conceded it to be a 'mixed good' since, economically,

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[101] Andrews and Smith, *'Let There be Light Again'*, pp.6-9.
[102] 67*th* *Glasgow Royal Asylum Annual Report*, 1880, GGHB13B/2/221, p.10.
[103] *84th* *Glasgow Royal Asylum Annual Report*, 1897, GGHB13B/2/221, p.11.

the useful work done by the parish patients would be lost, since private patients could not be expected to perform these tasks. There were a few pauper patients admitted in 1885, but thereafter all patients were classed as private. In 1889, Gartnavel ceased to admit pauper patients altogether, although a small number already resident remained in the Asylum.

Gartnavel became a private institution of national appeal with the exodus of all its paupers, including large contingents of patients from Argyll and Bute, the Inner Hebrides, Paisley and Greenock, and the loss of a further influx from the City, Barony and Govan, to the multiplying parochial and district asylums. However, as Andrews points out, to some extent, the total exclusion of paupers from Gartnavel was merely a realisation of earlier admission policies. Long before the 1870s, the Asylum had been choosy about pauper admissions. While private cases were rarely turned away, paupers who were destructive, pregnant, chronic, moribund or infectious were frequently refused or quickly discharged.[104] The exclusion of paupers (especially male paupers) from Gartnavel also entailed the exclusion of Roman Catholic patients, a large number of whom must have been Irish immigrants. Gartnavel had always been a highly Presbyterian, Protestant establishment, but Catholics had comprised a significant minority of the Asylum's patients and, even during the period from 1878 to 1886, had still made up more than 10 per cent of admissions.[105]

Gartnavel was, from the beginning, designed first and foremost to service Glasgow citizens. Paupers from the city were received on a reduced rate of board, and tended to make up a third of the patient population. In addition, between seventeen and twenty-four parishes (mostly those around Glasgow who used the Asylum regularly) gained admissions for their lunatic poor at privileged rates, on payment of a subscription scaled in proportion to their population. Yet the Institution's catchment area extended much more widely than this, acting in effect as a district asylum for the whole of the West of Scotland, as well as drawing small contingents from the outlying highlands and islands.[106] In relation to the private

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[104] Andrews, 'Raising the Tone of Asylumdom', pp.208-9.
[105] *Ibid.*, p.212.
[106] *Ibid.*, pp.207-8.

category, any person in the City of Glasgow or its surrounding settlements who fulfilled the necessary legal and medical criteria could be admitted; although once there, this private patient was confronted with up to eight different fees, the quality of the service offered clearly differing with the price. A similarly tight categorisation applied to the pauper intake.[107] Admission was granted firstly to City parish paupers; then provision was made for the paupers of contributing parishes;[108] and finally the pauper insane of non-contributory parishes could, if the Guardians so desired, be admitted.[109] The Asylum then established a clear demarcation in the service it offered. Furthermore, as a result of its 'contracting parish policy', Glasgow's catchment area became wider still. Although Gartnavel was intended to serve as a large public institution for the District, as were the other Royal asylums, parishes as far away from Glasgow as Ayr, Greenock and Campbeltown were at some point making use of its facilities.[110]

In most contemporary asylums, stress was placed on segregating the pauper and private patients from each other, a reaction against the lack of classification in old 'unreformed' asylums. The emphasis on segregation by class in Scotland was perhaps taken furthest at Gartnavel, owing to the panoptic elements incorporated into its design by the architect William Stark. Stark's Asylum appears to have been the first example of the Panopticon Model being used in asylum design in Britain (see **Appendix 8**). Its centre was an octagon, covered with a circular attic. Four oblong wings, three stories in height, were attached to the octagon and radiated obliquely outwards in opposite directions, like spokes of a wheel.[111] The Asylum adhered to a strict regime of ordered symmetry, but was criticised by some for being no more than a reproduction of a prison at Ipswich.

When the Asylum removed to Gartnavel in 1843, the Edinburgh model was applied, with an 'East House' for about 290 paupers and a much smaller 'West House' for the private patients.[112] The East department also housed patients paying

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[107] Rice, 'Madness and Industrial Society', p.380.
[108] Which by reason of their contributing £50 for every 1,500 of their inhabitants earned the right of admission at the same rate as the City authorities.
[109] Who paid a higher rate for having their patients admitted.
[110] Rice, 'Madness and Industrial Society', p.241.
[111] Andrews and Smith, *'Let There be Light Again'*, p.27.
[112] Rice, 'Madness and Industrial Society', p.449.

the lower rates of board who were accommodated in large, overcrowded, unadorned wards. The day-room space was restricted, the furnishings uncomfortable, and all the ambulant patients of both sexes dined in a large hall, which was also used for concerts and dances. Snedden comments that it is clearly no accident that no promotional print of any early East House gallery survives amongst the Asylum's large archive.[113] In contrast, the West House was decorated in the style of the times and comparable to a private mansion in its interior features. It consisted of smaller, well-furnished, comfortable wards and sitting rooms, and there were plenty of private rooms for those who required or requested greater privacy and special nursing.

However, the major changes in Gartnavel's catchment population came during the period from 1850 to 1890. Under increasing pressure of space, Gartnavel was soon to deviate from its original ideals, the strict classification Stark envisaged ultimately proving unfeasible. While paupers consistently outnumbered private patients for most of the century, their interests were consistently subordinated to those of private patients. Even with respect to the early Asylum's design it was felt that, as it was private patients who would defray the Institution's expense, the 'external appearance' should attract their attention. The Asylum's identity was thus transformed from a mixed institution into an establishment catering exclusively for private patients.[114]

As in the REA, employment was an important part of the Asylum regime. Dr. Balmanno, an Edinburgh graduate who became one of the first Directors of the Asylum, expressed the view that occupation prevented the mind from dwelling on its delusions, and frequently ended the restlessness which attended forms of insanity. Early in his term as Physician Superintendent, Alexander Mackintosh even appealed for patients to be given some financial remuneration for their labour, although the Directors failed to take up the idea. Although Yellowlees believed that amusement could be used to 'relieve the monotony of Asylum residence',[115] he felt that

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[113] Andrews and Smith, *'Let There be Light Again'*, p.31.
[114] Andrews, 'Raising the Tone of Asylumdom', p.207.
[115] *69th Glasgow Royal Asylum Annual Report*, 1882, GGHB13B/2/221, p.11

employment was a valuable means of treatment, for 'neither the sane nor the insane are benefited by a continual round of amusements'.[116]

Many of the pauper patients worked indoors as domestics or labourers, depending on their gender. However they did not replace tradesmen in the Asylum – by 1845, resident tradesmen with their own workshops included a weaver, tailor, shoemaker, and carpenter.[117] Furthermore, based on his experiences in the United States, Henderson is credited with having introduced occupational therapy to Scotland, utilising it first at Gartnavel during the 1920s. Industrial therapy was formally introduced to the Asylum in 1922, the average daily class attendance being around 98. Each class lasted about 1.5 hours, involving skills like simple woodwork, basketry, china painting, metal work, and embroidery.

In addition, at Gartnavel, there was plenty of work for the patients in the gardens and grounds of the estate. Yellowlees insisted that 'outdoor occupation is probably the most valuable of all the aids to treatment', and in fact felt that it was 'because of his greater aptitude for such employment that a poor man stricken with insanity has often a better chance of recovery than a rich one'.[118] Thus patients made roads, landscaped earth, planted trees and shrubs, and shored up the banks of the Bothlin Burn. The garden also provided soft fruit, vegetables and tomatoes for the Hospital. Gartnavel's Directors listed carefully in the Annual Reports the quantities achieved from their farm each year. Male patients did most of the work in the gardens but some light work, such as weeding, was done by female patients.[119]

In terms of leisure, bowling was the first sport to be played at Gartnavel, the bowling green being completed in 1853. Games such as draughts, backgammon and billiards were also offered. Croquet was popular with the ladies, who had their own private croquet lawn. Gartnavel even had its own golf course, the first tee being located in front of the West House.[120] In addition, a library was eventually opened, use having previously been made of a travelling one in which books on religion, history and travel, along with magazines, proved particularly popular.[121] With the

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[116] *68th Glasgow Royal Asylum Annual Report*, 1881, GGHB13B/2/221, p12.
[117] Andrews and Smith, *'Let There be Light Again'*, p.36.
[118] *65th Glasgow Royal Asylum Annual Report*, 1878, GGHB13B/2/221, p.14.
[119] Hutton, *Woodilee*, p.59.
[120] Andrews and Smith, *'Let There be Light Again'*, p.35.
[121] Rice, 'Madness and Industrial Society', p.486.

move from Stark's asylum to the new building, an increased variety of activities became available. Iron seats were placed in the grounds, shelters were added for walkers, and outdoor sports grew more numerous. Activities also included the annual Fancy Dress Ball, the theatrical and musical performances of staff and patients, and the cricket and football fixtures. The annual Asylum holiday was an important event for those patients privileged enough to participate, as it offered an escape from the routine of asylum life.

In relation to the moral management of patients, divine service was held at Gartnavel from 1819 onwards, initially in one of the eight-foot wide galleries of the old Asylum. Too cramped, and excessively hot in summer, plans were drawn up to build a chapel as part of an extension. In 1827, a legacy of £1500 allowed progress to be made, the chapel being duly built and opened in 1828. By 1845, the Chaplain was officiating at four Sunday Services in different parts of the Institution, taking daily prayers, and visiting the sick during the week. A hospital church was not finally built until 1904.[122]

In terms of staffing, the Asylum broadly resembled the REA. It was headed by two groups, the Directors and Officers. Whereas in Edinburgh the Managers were subject to a higher authority, in Glasgow ultimate executive authority lay with the Directors themselves. This group included representatives of civic and mercantile interests as well as medical professionals, and met quarterly. However, because of the pattern of quarterly meetings of the Directorate, a sub-committee known as the 'weekly committee' attended to daily affairs. The Asylum administration remained fairly stable over the years. For example, John Roxburgh (later Sir John) was a Director and committee member at Gartnavel for over twenty years from 1901, and served on the Weekly Committee for the next three decades until his death in 1937.[123] Daily responsibility for financial matters lay with the Treasurer, originally vetted by a small group of directors. The Treasurer maintained the accounts held in the Asylum bank account. Managing the accounts by the quarter, he received all sums due to the Institution and discharged all demands against it. These Gartnavel accounts show that, until 1948, the vast bulk of revenue came from patients'

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[122] Andrews and Smith, *'Let There be Light Again'*, p.18.
[123] *Ibid.*, p.4.

board.[124] This was the administrative structure in the early years of the Asylum's existence, a structure modelled on that of other contemporary medical institutions. Apart from minor changes, it proved remarkably durable, lasting until 1948, with the advent of the National Health Service.

FIGURE 3.6 Physician Superintendents of Gartnavel

W. Hutcheson	1841-1849
A. McIntosh	1849-1874
D. Yellowlees	1874-1901
L. Oswald	1901-1921
D. K. Henderson	1921-1932

Figure 3.6 provides an overview of all Physician Superintendents serving Gartnavel from its founding until the mid-twentieth century. **Appendix 9** elaborates on the most significant of these individuals within the period from 1880 to 1930, compiling comprehensive biographical details of each. Gartnavel had no resident physician when first founded, its medical regime being appointed in a visiting capacity.[125] This however is not to imply that this officer's task was a trivial one. Among his remits were the admission, examination, treatment and discharge of the patients, the supervision of staff, and the writing and maintenance of a number of reports. The first visiting physicians at Gartnavel were Robert Cleghorn (1814-1819) and John Balmanno (1819-1840). In addition, Cleghorn combined a thriving private practice with the post of Visiting Physician to the recently opened Glasgow Royal Infirmary. As the Asylum and its turnover of patients grew, increasing demands were placed on Cleghorn's successor, Balmanno, so that towards the end of his period of office, he was doing little else but asylum work.[126] However, during the early years, it was the Superintendent and Matron who actually cared for the inmates,

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[124] *Ibid.*, p.6.
[125] *Ibid.*, p.52.
[126] J. Andrews and I. Smith, 'The Evolution of Psychiatry in Glasgow During the Nineteenth and Early Twentieth Centuries', in H. Freeman and G. Berrios (eds), *150 Years of British Psychiatry*, volume one (London, Athlone, 1996), p.310.

subject to the Physician's guidance. This strongly suggests that during the early years of the Asylum, the Superintendent was the principal officer of the Institution, combining an administrative, nursing and quasi-medical role in conjunction with a part-time medical role.[127]

In 1841, the Asylum equipped itself with its first full-time resident Physician Superintendent. The Superintendent's nursing functions were transferred to a new officer, the Steward, and his administrative tasks were transferred to the Physician, creating this new full-time medical-administrative post of Physician Superintendent.[128] As **Figure 3.6** shows, William Hutcheson was the first Physician Superintendent at Glasgow, serving from 1841 until 1849, and the man who oversaw the move to the new site. Gartnavel was the last Scottish chartered asylum to gain a resident medical executive. It was not until Hutcheson's last year there as Physician that he also held the post of Superintendent. His successor was Alexander McIntosh, who had already been Physician Superintendent in Dundee. The Physician Superintendent took on an increasingly omnipotent role as the century unfolded. At Gartnavel, David Yellowlees in particular was a powerful presence, overseeing everything that happened in the Asylum. This role was overtly acknowledged at Gartnavel during Oswald's time as Physician Superintendent, when he became deferentially known as 'The Chief', a title which became common for Physician Superintendents in other asylums also.[129] In 1915, Gartnavel introduced the post of Assistant Physician, replacing the Medical Assistants the Institution had previously opted for. Both were multiple posts, with in some years two or three holders rather than just one. The first person elected to the post was D. K. Henderson, who went on to become Physician Superintendent of both Gartnavel and the REA. He left after one year, but returned to the post in 1919, while in the following year the post's title was changed yet again to Deputy Physician Superintendent just for that one year, after which Henderson was appointed Physician Superintendent.

Gartnavel had the same general body of staff as the REA. In 1815, Gartnavel had just 6 keepers tending some 73 patients, a ratio of 1:12. By 1857, a ratio of just

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[127] Andrews and Smith, *'Let There be Light Again'*, p.380.
[128] Rice, 'Madness and Industrial Society', p.380.
[129] Andrews and Smith, *'Let There be Light Again'*, p.54.

one attendant to every 14 patients was seen in the pauper East House, compared to that of 1:4 maintained in the West House.[130] Throughout much of the Asylum's history, recruiting and retaining good quality staff remaining a problem. Asylum nurses occupied the same lowly position as seen in the REA. There is no real evidence of any structured on-site training for nurse attendants until 1857, when Gartnavel attendants were trained in the use of the thermometer.

In many ways, developments in Gartnavel staffing mirrored those of its eastern neighbour.[131] David Yellowlees had been partly attracted to Glasgow by the possibility of involvement with formal psychiatric teaching at the University, and was appointed as the first Lecturer in Mental Diseases there. Henderson, probably the most famous and important of Gartnavel's Physician Superintendents, made a significant contribution to the running and reputation of the Institution, bringing with him a host of knowledge and experience gleaned from centres of excellence in Germany and the United States.

Gartnavel serves as a prime example of how the issue of overcrowding plagued asylums, suffering throughout the nineteenth and a large part of the twentieth centuries. The population Gartnavel served grew at an inordinate rate, increasing by roughly one million between 1841 and 1911.[132] Between 1880 and 1930, Gartnavel was admitting between 110 and 150 patients every year, with over 500 resident at any one time. **Figure 3.7** sketches the total number of admissions to the Asylum, and also the number of specifically neurosyphilitic admissions, over the period from 1880 to 1930.[133] Over this fifty-year period, there was a slight reduction in admissions, due mainly to the rejection of pauper cases, but with marked fluctuations. However, until 1920, the proportion of neurosyphilitic admissions rose slightly. This period saw Gartnavel's total admissions range between 93 and 225, and neurosyphilitic admissions between 1 and 25, with neurosyphilitics constituting an average of five per cent of the total admissions over the period.

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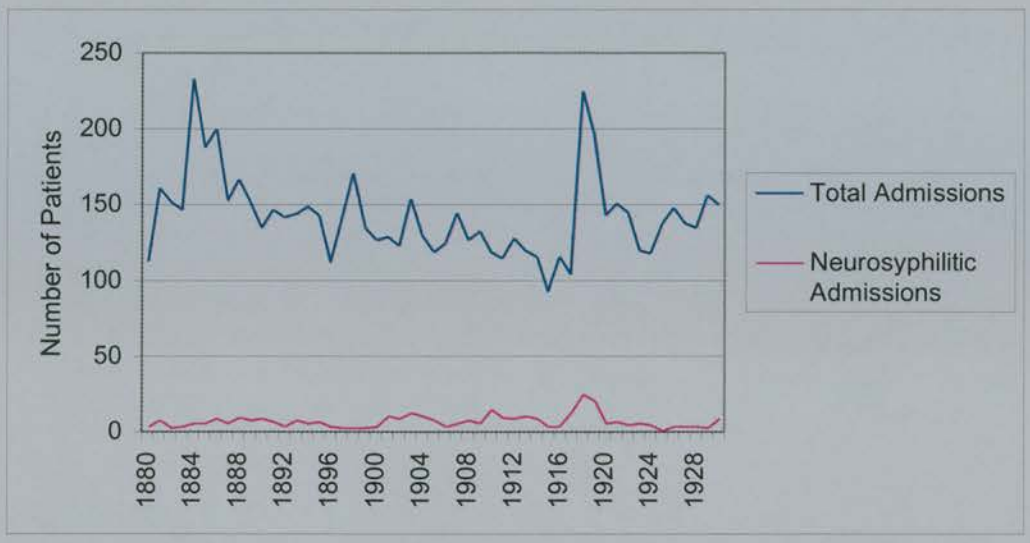
[130] *Ibid.*, pp.84-5.
[131] Andrews and Smith, 'The Evolution of Psychiatry', p.319.
[132] *Ibid.*, p.313.
[133] These figures are given in the Annual Reports, of which there is a complete run over this period.

Figure 3.7 Admissions to Gartnavel, 1880-1930



Source: *Glasgow Royal Asylum Annual Reports*, 1814-1940, GGHB13B/2/221-224.

Woodilee

As a parochial asylum, Woodilee was established to receive the pauper insane of Barony District. In its early years, the Asylum had to take anyone whose circumstances brought them within the scope of the Poor Law Acts, including 'state patients' (convicted criminals).[134] In fact, since many of the patients were very poor or homeless, they would often have nowhere to go on discharge, except the poorhouse. Thus, Woodilee clearly did not require to be designed in such a way as to separate the classes. However, there was a perceived need for gender segregation. Thus male and female patients were kept in separate divisions. The Managers stipulated that no male attendant, servant or patient was permitted in the female wards, nor was any female to enter the male wards except female servants or nurses appointed to do duty there.[135] A bell summoned patients to their meals, which were

[134] Hutton, *Woodilee*, p.61.
[135] 'Glasgow District Asylum, Woodilee, Lenzie: General Management of the Asylum, and General Rules for the Guidance of Attendants', 1900, GGHB30/8/3, p.3.

taken in the communal dining room, with men sitting on one side and women on the other.

The management of Woodilee distinguished itself in the substantial employment of its patients of both sexes in work, which they felt removed from patients' minds the sense of imprisonment. As the Commissioners proudly reported:

> The number of patients actively and profitably employed on the occasion of last inspection was 409, 205 men and 204 women; all the idle, who consisted of 45 men and 32 women, were all registered as physically incapable of work.[136]

It was believed that: 'The work that is done is of great use to the patients in promoting their contentment and improving both their bodily and mental health.'[137] A pauper's previous occupations often determined the work they did as inmates. In Woodilee, workshops and tools were provided for artizans, who were encouraged to follow their particular callings, as well as learning other skills. Whereas in Gartnavel, patients were not paid for their work, in Woodilee they were, tending to spend the money on tobacco.

It was widely accepted during the nineteenth century that the insane would benefit from the therapeutic effects of working on a farm and, at the same time, supply valuable produce to asylums. The main Asylum of Woodilee was built on the site of the original estate farm buildings, but the fields were quickly put to use to provide patients with the therapeutic benefits of farm work, and the Institution with food. The buildings were also used as a subsidiary Asylum, with initially twenty male patients and their attendants in residence. The Asylum purchased two new adjoining farms in 1902 when, for the first time in its history, the available land was insufficient to meet requirements in agricultural produce, chiefly vegetables. Woodilee thus had four farms and agricultural work was used as a form of work therapy until the late 1960s. In the early years, the farms produced beef, mutton, veal, pork, chickens, oatmeal, milk, butter, eggs, potatoes, soft fruit, rhubarb and vegetables. However, by the 1920s, they were largely given over to grazing with

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[136] *23rd Commissioners of Lunacy for Scotland Annual Report*, 1881, GGHB13B/14/59, p.xxiii.
[137] *Ibid.*

crops of wheat, oats, turnips, cabbage, hay, grass and potatoes. Surplus produce was offered to other institutions.[138] A quarter of male patients worked on the farms, although at hay-making time female patients also helped in the fields.

Another important method of treatment was what would now be termed 'industrial therapy'. This therapy is regarded as having developed from the much earlier Brabazon Employment Scheme which was first introduced to a Scottish asylum at Woodilee in 1898.[139] The scheme was devised by Mary Jane Brabazon, Countess of Meath, to employ poorhouse inmates, and was first used at the Union Poorhouse at Tonbridge in England.[140] Patients made craft goods with materials purchased from a small fund. They were then sold and the proceeds put towards new materials. It was seen as particularly appropriate and beneficial for those patients 'physically unfit for strenuous work … whose mental condition must be stimulated and educated by a greater variety of light and interesting occupations'.[141] The work done by the patients (some of them incapable of any other form of employment), included carving, embroidery, painting in oil and water colour, rug making, and basket work. The fund became self-perpetuating, with any surplus used to provide treats and incentives. About fifty patients were instructed one day per week by the ladies of the Brabazon Employment Society. Although these volunteer ladies were still active in the late 1920s, nurses had begun to take over their work, with the produce still being sold at sales of work to pay for outings.[142]

At Woodilee, patients could also relax in day rooms. Provisions included Bibles, books, and cheap publications. Outdoor recreation was encouraged, and as soon as the Asylum was opened, a bowling green was laid out next to it. The grounds of Woodilee were also adapted to provide patients with a cricket ground, tennis courts, croquet lawns, and curling rinks. The recreation hall was used for dances, concerts and a wide variety of entertainments, including plays and choral recitals. Staff joined patients for Monday evening dances in the hall. Services for

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[138] Hutton, *Woodilee*, p.52.
[139] For a more comprehensive discussion of this Society, see E. Halliday, 'The Hospitalisation of Scottish Asylum Culture, 1880-1910', Ph.D. thesis, University of Stirling (forthcoming).
[140] Hutton, *Woodilee*, p.65.
[141] *13th Board of Control for Scotland Annual Report*, 1926, GGHB13B/14/71, p.xxxi.
[142] Hutton, *Woodilee*, p.59.

Catholic patients were also originally held in this recreation hall, although later all denominations used the church.[143]

FIGURE 3.8 Physician Superintendents of Woodilee

J. Rutherford	1874-1883
R. Blair	1883-1902
H. Marr	1902-1910
H. Carre	1910-1936

Figure 3.8 provides an overview of all Physician Superintendents serving Woodilee from its founding until the mid-twentieth century. James Rutherford was the first Medical Superintendent of Woodilee. Under his pioneering influence, doors were unlocked and patients given a variety of activities, ranging from craft work to physical work in the grounds, wards, and farm.[144] After their exertions, patients could wander freely in the Asylum grounds. Rutherford left Woodilee in 1883 on his appointment as Medical Superintendent to the Royal Asylum of Crichton, Dumfries. Robert Blair replaced Rutherford as second Physician Superintendent of Woodilee. Previous to this, he had been an Assistant Physician at Gartnavel. He resigned after nineteen years service. In accepting his resignation, the Woodilee Committee appointed Blair as Consulting Physician 'so that his services and experience may be at their disposal in the future in that capacity'.[145]

Hamilton Marr (1870-1936) was surely the most successful of Woodilee's staff. He graduated in medicine from the University of Glasgow in 1892, gaining his M.D. three years later at the age of 25. From the outset of his medical career, he was attracted to the study of mental and nervous disorders, and spent a few years as Woodilee's first Assistant Physician, and Senior Assistant Medical Officer to the Crichton Royal Asylum, Dumfries. Marr then returned to Woodilee to the posts of

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[143] *Ibid.*, p.28.
[144] Hutton, *Woodilee*, p.13.
[145] *Barony Parochial Asylum Annual Report*, 1902, GGHB30/2/12A, p.10.

Deputy Medical Superintendent and then Superintendent in 1902. He also became Mackintosh Lecturer in Psychological Medicine at St. Mungo's Medical College, Glasgow, and extramural Lecturer in Mental Diseases at the University. He was subsequently appointed H. M. Medical Commissioner in Lunacy for Scotland in 1910, and then Senior Medical Commissioner for the General Board of Control, roles which he was to fulfil powerfully. During the Great War, he served as Specialist in Mental Diseases to the troops in Malta, and later as Consultant in Nervous and Mental Diseases to the Scottish Command. His experiences in the war formed the basis of his work *Psychoses of the War, including Neurasthenia and Shell Shock*, which attracted much attention upon its publication in 1919.[146] From 1927 to 1928, Marr was also President of the MPA. He retired from the Board of Control in 1935, after 25 years of service. Henry Carre succeeded Marr when he left Woodilee to become one of the Commissioners. Previous to this, Carre had been Assistant Medical Officer at the Asylum since 1897, and was unanimously appointed to succeed Marr. He retired in 1936.

The creation of the new district asylums allowed for the expansion of psychiatry as a profession, and saw the emergence of rather more prominent medical figures at their heads. For example, the first Physician Superintendent at Woodilee, James Rutherford, had previously been in charge of Argyll and Bute District Asylum – the first of Scotland's district asylums – and subsequently took charge of the Crichton Royal Institution. He was to become a distinguished alienist, co-translating Griesinger's *Manual of Mental Diseases* (1867) and acting as Honorary Secretary to the Scottish Medico-Psychological Association (MPA).[147] In 1900, Woodilee appointed its first Assistant Medical Superintendent, Hamilton Marr, who became the Medical Superintendent two years later, before leaving to become one of the Commissioners in Lunacy, a role he was to fulfil powerfully. A Glasgow-educated physician, Marr steadily scaled the psychiatric ladder following his initial posts at Woodilee.

On the other hand, many junior medical officers who started out at these asylums failed to go on to achieve senior positions within psychiatry, or even to

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[146] 'Obituary of Hamilton Marr', *British Medical Journal*, 1 (1936), pp.1234-5.
[147] Andrews and Smith, 'The Evolution of Psychiatry', p.314.

specialise in psychiatry at all. Many opted for careers in general medicine, both in the general hospitals and infirmaries of the district, and as parochial medical officers, or else preferred the better remuneration offered by private practice. A number did not remain in Edinburgh or Glasgow at all, but moved on to more attractive posts either elsewhere in Scotland or further afield – emigrating to places like Australia or New Zealand.[148] A number of the Physician Superintendents were not considered worthy enough to have their obituary published within any medical journals, including Carre.

In terms of nursing in the early days of the Institution, nursing staff had to live on site, many having to sleep in the wards. This was clearly far from ideal, taking up a number of beds which would otherwise have been used for patients. The situation was resolved when a Nurses Home was opened within the Asylum grounds in 1904. Shorter working hours also led to an increase in staff numbers, so that by 1931, the home built to accommodate 110 nurses and maids was housing 166 females. This overcrowding was resolved in the later 1930s, when the home was doubled in size.[149]

At the turn of the twentieth century, nurses and attendants were taken on for a probationary period of three months, after which they had to pass an educational examination. This was followed by three years' training, with practical demonstrations in wards and lectures during the winter months. More exams were followed by a further year's training at Stobhill or the district hospitals of the Glasgow Parish Council. Despite the level of training, nurses had to complete many basic chores such as washing the windows, setting fires in the wards and keeping them burning, and scraping the dirt from the gaps between floorboards with a pen knife.[150] Unusually, Woodilee's male hospital and reception wards were staffed with hospital-trained female nurses from the early days. However, female nurses were not introduced to male asylum wards and male nurses to female wards until the 1960s.

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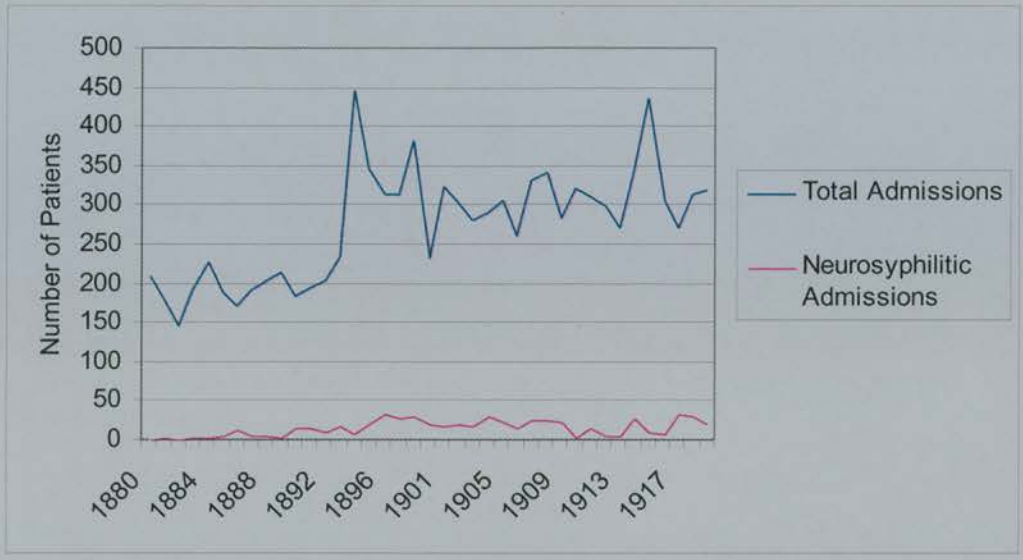
[148] *Ibid.*, pp.315-6.
[149] Hutton, *Woodilee*, p.38.
[150] *Ibid.*, p.41.

Figure 3.9 Admissions to Woodilee, 1880-1920



Source: *Barony Parochial Asylum Annual Report*, 1919, GGHB30/2/20.

Finally, in terms of the demography of the Institution, **Figure 3.9** sketches the total number of admissions to the Asylum, and also the number of specifically neurosyphilitic admissions, over the period from 1880 to 1920.[151] Over this forty-year period, there was generally a steady rise in admissions to the Asylum, although 1894 and 1915 witnessed a significantly larger influx of patients. The former of these was probably at least partly due to the expulsion of pauper lunatics from Gartnavel. Furthermore, the Annual Report of that year states that two new Chronic blocks were wholly completed and opened early that year, and were now in operation, giving a total accommodation for 850 patients. The reasons for the 1915 influx are unclear, since an Annual Report is not available for the year in question. This period sees Woodilee total admissions fluctuate between 145 and 446, and neurosyphilitic admissions between 1 and 33, with neurosyphilitics constituting an average of six per cent of the total admissions over the forty years.

[151] Annual Reports for this institution were not available post-1920, and not consistently throughout the period from 1880 to 1920. However, the 1920 Report provides a retrospective overview of the Asylum admission figures from 1875.

As with Woodilee, Rosslynlee was established to receive the pauper insane of its district, that of the Midlothian and Peebles District. In 1921, this district was reduced when four parishes formerly included in the Midlothian area – Colinton, Corstorphine, Cramond and Liberton – were absorbed by Greater Edinburgh. The Asylum buildings could accommodate 230 patients, more than were initially resident in its early years. Thus, as well as taking anyone whose circumstances brought them within the scope of the Poor Law Acts, the vacant beds were occupied by patients from other districts, and by patients of a higher class, who would pay a remunerative rate of board in return for the accommodation afforded to them. However, by 1894, the Medical Superintendent was lamenting the increasing Asylum pauper population, and the fact that if this trend continued, they would soon be driven to remove all private patients. This fact would inevitably lead to 'a considerable rise in the maintenance rate, which has now stood several years at the low figure of £22 per annum'.[152] And by 1896, the Physician Superintendent was transferring a number of private patients to other asylums, and boarding out incurable pauper patients. Furthermore, in 1903, a number of REA patients were admitted to Rosslynlee to relieve the pressure on that Asylum. They were transferred to be maintained at £32 per year. This was seen as beneficial to Rosslynlee since it proved to be a source of revenue for several years.

All patients of Rosslynlee who were physically able were daily employed at work. By 1902, it was estimated that about 70 per cent of all patients did some useful work. The more able-bodied men engaged themselves at out-door labour: gardening, farming, and laying out the grounds adjoining the Asylum. A number engaged in housework, while the tradesmen employed themselves as tailors, shoemakers, masons, painters, smiths, or carpenters. The women occupied their time chiefly with sewing, knitting, house and laundry work. Thus, as with the other institutions, work was segregated very much along gender lines, as it was in the outside world. As in Woodilee, Rosslylee implemented the Brabazon Scheme into her programme of

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[152] *10th Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1894, LHB33/2/1, p.16.

activities. After Woodilee and her 'sister' institution Gartloch, Rosslynlee was the third Scottish asylum to utilise this scheme, introducing it to the patients in 1905. Approximately 30 patients attended these classes on a weekly basis.

In the early years of Rosslynlee, quoits was the only outdoor game offered. Annual picnics to the Pentlands or Moorfoots were commenced in the summer of 1889 and continued until the war years, and were much enjoyed by the patients. There was also a weekly dance, with occasional concerts or dramatic entertainments. By 1902, the Institution had seen nine cricket matches played, curling matches, concerts and variety entertainments, dances, athletic games, and the annual picnic.[153] By the 1920s, the Institution was offering patients an array of sports, including golf, tennis, bowls, curling, football and hockey. Games, the daily newspapers, and periodicals were also provided throughout the period. Religious service was held every Sunday morning, with up to 100 patients in attendance. The Roman Catholic patients were visited by a Father and Assistant Priests from Rosewell, with services held at special seasons.

Throughout the 1880s, the staff of the Asylum included a Medical Superintendent, Chaplain, Steward, five farm or garden servants, five artisans, four women engaged in the kitchen or laundry, and fourteen male or female attendants.[154] Physician Superintendent Cameron also commented with pride on the Asylum's low turnover of staff, especially the Attendants, whose duties were 'among the most trying to which human patience can be subjected'.[155] By 1908, the ratio of Attendants to patients was one to ten for day duty, and one to fifty for night duty.

One year after Woodilee, in 1894, Rosslynlee appointed Robert Cross as their first Assistant Physician. The post disappeared in 1915, to be replaced in 1921 with the post of Assistant Medical Superintendent. This was seen by John Sibbald, Commissioner in Lunacy, as an important step for the Asylum, given that:

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[153] *18th Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1902, LHB33/2/1, p.27.
[154] *4th Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1883-1888, LHB33/2/1, p.25.
[155] *3rd Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1880-1883, LHB33/2/1, p.20.

> The administration of an Asylum with only one Medical Officer is always conducted under some difficulty, and the appointment of an Assistant to Dr. Mitchell would be attended with important administrative and other advantages.[156]

FIGURE 3.10 Physician Superintendents of Rosslynlee

T. Anderson	1874-1880
R. Cameron	1880-1888
R. B. Mitchell	1888-1916
J. H. C. Orr	1916-post-1941

Figure 3.10 provides an overview of all Physician Superintendents serving Rosslynlee from its founding to the mid-twentieth century. Robert Cameron was appointed Interim Superintendent due to the illness of Medical Superintendent Thomas Anderson, who had formerly been an assistant at the Southern Counties Asylum, Dumfries. Cameron was then appointed to a permanent post when Anderson was forced to retire due to his poor health. However, as the Annual Report of Rosslynlee states: 'The Board regret to say that subsequent investigation of the affairs of the Asylum and its management necessitated some important changes in the staff.'[157] As a result, Cameron resigned the office of Medical Superintendent. In 1888, Richard Blackwell Mitchell was appointed Medical Superintendent of Rosslynlee to succeed Cameron, and filled the post for 28 years, not retiring until 1916. Mitchell was probably the most significant of the Rosslynlee physicians. A native of Orkney, he received his medical education at the University of Edinburgh, where he graduated M.B. C.M. in 1879, gaining his M.D. in 1885. At an early stage in his career, he devoted himself to the study of insanity, becoming Assistant Medical Officer in the Fife and Kinross District Asylum, and later, Senior Assistant Physician under Clouston at the REA. In 1909, the Assistant Physician Sturrock left

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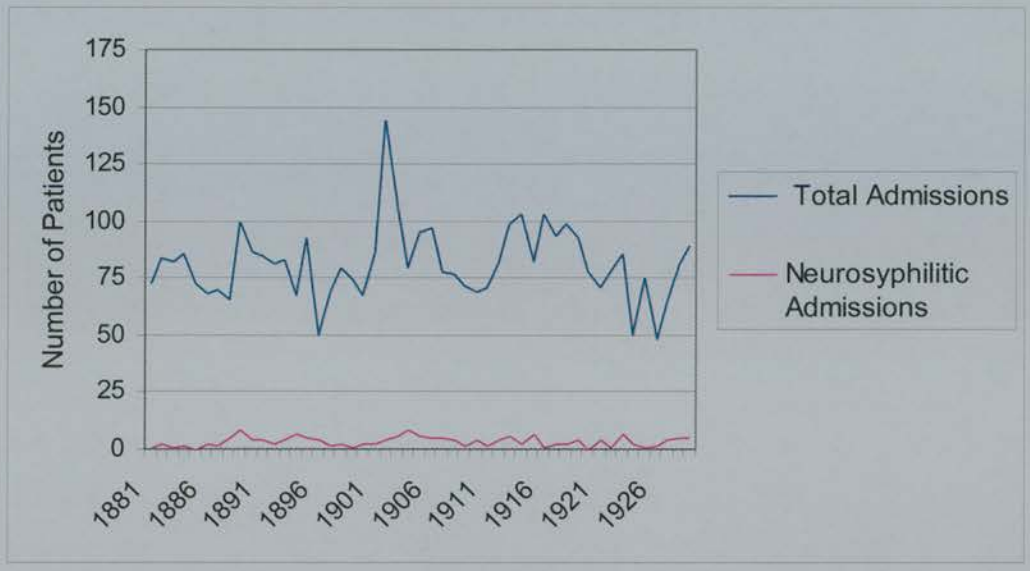
[156] *11th Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1895, LHB33/2/1, p.24.

[157] *4th Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1883-1888, LHB33/2/1, p.6.

Figure 3.11 Admissions to Rosslynlee, 1880-1930



Source: *Midlothian and Peebles District Asylum Annual Reports*, 1880-1930, LHB33/2/1-3.

on being appointed Medical Officer to Perth Prison. James Henry Cubitt Orr was appointed to the post vacated by Sturrock.

Finally, in terms of the demography of the Institution, **Figure 3.11** sketches the total number of admissions to the Asylum, and also the number of specifically neurosyphilitic admissions, over the period from 1880 to 1930.[158] Admissions remained relatively steady throughout this period, except in 1902, which saw a sharp rise in the total number of admissions to the Asylum. This was perhaps due to the 'fair increase in the number of private patients' as the 'merits and excellent accommodation of the Asylum become known'.[159] This fifty-year period sees Rosslynlee total admissions fluctuate between 48 and 144, and neurosyphilitic admissions between zero and 9, with neurosyphilitics constituting an average of five per cent of the total admissions over the period as a whole. In the years 1924 to

[158] The 'total admission' figures are taken from the Annual Report. However, neurosyphilitic admission figures are not given here, so that reliance has been placed on the case notes in this case. This is, thus, slightly different from the other three asylums, where neurosyphilitic admissions are given in the Annual Reports.

[159] *18th Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1902, LHB33/2/1, p.7.

1926, when the admissions were at their lowest, the Medical Superintendent explained that it was 'impossible to attribute any reasonable or scientific explanation for this condition'.[160] When the admissions were a little higher, this tended to be during the war years, when Bangour Asylum was converted into a Military Hospital, and Larbert Asylum taken over by the authorities as a Naval Hospital. Thus, Rosslynlee was asked to take over all patients from certain parishes in the Stirling District.

Asylums as Trans-Institutional Organisations

Brown warns us to ground the 'microworld of the asylum' within the 'wider macrostructures' of the social world around it.[161] A discussion of each asylum as a discrete entity neglects the fact that these institutions were linked in various ways. The historiography of psychiatry often fails to reflect the interaction between these institutions and the outside world, as well as the similarities between the two. Obviously visitors to the asylums constituted a major interaction between institution and society, although we have little information from asylum records on these visits. Certainly the asylums encouraged family visits on a designated day of the week. Clouston expressed pleasure that the REA was only two miles from the City Centre, readily accessible to public transportation, because it encouraged the maintenance of family ties. Clouston bragged that three hundred 'busy working people' visited relatives each Wednesday, arguing that these visits encouraged relatives not to abandon family members, and allowed patients to have short trial periods at home.[162]

Some asylums also published magazines to keep outsiders informed of asylum events and interests. They were filled with patients' artistic, literary and scientific endeavours, and were produced by several of the Royal asylums. The *Crichton New Moon*, *Gartnavel Gazette*, *Montrose Sunnyside Chronicle*, and

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[160] *41st Annual Report of the Midlothian and Peebles District Board of Lunacy*, 1925, LHB33/2/2, p.10.
[161] T. Brown, 'Dance of the Dialectic? Some Reflections (Polemic or Otherwise) on the Present State of Nineteenth-Century Asylum Studies', *Canadian Bulletin of Medical History*, 11 (1994), p.282.
[162] *73rd Royal Edinburgh Asylum Annual Report*, 1885, LHB7/7/9, p.9.

Morningside Mirror gave patients the opportunity to document their thoughts on a bewildering variety of topics, and were available for sale outwith each institution. The *Morningside Mirror* was started up in 1845 by Physician Superintendent McKinnon, its editorship assigned to one of the REA assistant physicians. It was printed at the Asylum's workshop with patient involvement, particularly those formerly employed in the book and print trade.[163] Patients were encouraged to contribute items on Asylum outings and the activities of the Institution, as well as more general articles on history, art and travel. The magazine appeared monthly, and ran until 1974.

The *Gartnavel Gazette* had two runs during 1853 to 1855 and 1903 to 1925.[164] It consisted of a variety of articles on asylum events, literature, philosophy and travel, and also included poems and short stories. The earlier run was written entirely by patients, whereas the later run also included articles written by members of staff. Most of the editors were also patients. The second run of the 'Gazette' shows clear differences from the 1850s issues. It was, by then, produced quarterly, its structure and tone were more formal, and censorship was operated more strictly. Its contents, while still containing poems, short stories and articles on literature, history and travel, were more clearly focused on the Asylum and its activities rather than discussions of world news. Its rationale was neatly summed up in the 1904 Annual Report: 'Our little Magazine, published quarterly, gives an account of the amusements and recreations and of the lighter side of our life.'[165]

Work tasks and recreations provided further interaction with society, for example in relation to the production and sale of their work, or in sporting fixtures with teams outwith the asylum. Gartnavel's farms and gardens yielded large quantities of produce, which the authorities were able to sell for profit, as well as half of the pigs from the Asylum piggery, built in 1851. Regarding leisure and sporting fixtures, there were inter-asylum competitions for patients and staff in most sports, including bowling, cricket and tennis. There were also fixtures between asylums and

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[163] M. Barfoot and A. Beveridge, '"Our most Notable Inmate": John Willis Mason at the Royal Edinburgh Asylum, 1864-1901', *History of Psychiatry*, 4 (1993), p.172.
[164] J. Hunter, 'Patients' Perspectives: Writings of Patients at Gartnavel Royal Asylum, 1850-1925', M.A. thesis, University of Glasgow (1995), p.4.
[165] *91st Glasgow Royal Asylum Annual Report*, 1904, GGHB13B/2/222, p.17.

teams outwith the Institution. Bowls was particularly popular at Woodilee, the Institution achieving great success in asylum leagues, county and local competitions. Cricket provided similar opportunities to express the community spirit of the asylums.

Other entertainments entered these institutions from the outside world. For example, at Gartnavel, the Abstainers' Union provided concerts from 1858, although usually providing separate performances to higher-class and pauper patients.[166] Every Christmas, the staff of Woodilee put on a pantomime, which local people came to see. In later years, the pantomime went to the outside world, playing three nights in the Kirkintilloch Town Hall after its opening night at the Asylum.[167] The movies came to Woodilee in 1898, when a travelling cinematograph show was brought out from Glasgow. A projector was bought in 1921 and replaced in the 1930s by a sound projector paid for by two bequests, which also provided the Hospital with radio gramophones.[168] Friday night was movie night, although local children had a special screening of films in the afternoon.

The systems of probation and boarding out, discussed above, obviously continued this exchange with the outside world. There was no simple movement from institution to society, but some combination of the two in such cases. As well as the movement of patient populations between society and asylum, there was the movement of patients from one asylum to another, or the transfer of patients to the asylum from hospitals and other institutions, and back again in occasional circumstances. This is particularly true of neurosyphilitics, as their bodily symptoms often saw them admitted to the local poorhouse (including Buchan, Inveresk and Peebles) or hospital (usually the Royal Edinburgh Infirmary or Glasgow Royal Infirmary) before being transferred to the nearest asylum. Several neurosyphilitics were also transferred from prison. In the post-parochial asylum era, pauper patients admitted first to a Royal asylum would regularly be transferred to their nearest parochial asylum once they were fit enough. This movement is also seen among the neurosyphilitic patient populations, where patients were sent to a number of asylums

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[166] Andrews and Smith, *'Let There be Light Again'*, p.37.
[167] Hutton, *Woodilee*, p.27.
[168] *Ibid.*

such as Ayr, Fife and Kinross, Gartloch, Montrose or Perth. The REA itself had no neurosyphilitics transferred there from another institution, but did occasionally transfer a patient elsewhere after their stay, in particular to Rosslynlee. Gartnavel had only a handful of transfer cases, usually from a hospital or to a parochial asylum. In the case of Woodilee, a very high number of patients were transferred there, with only 87 of my 210 neurosyphilitics entering Woodilee as their first port of call. The remainder came from all manner of institutions – 4 from Barnhill poorhouse, 4 from the police station, 8 from prison (in most cases Barlinnie), 82 from hospital (usually the Eastern District Hospital), and the remainder from another asylum.

A further common factor among the asylums was their staff. Staff were a common group, training and interacting in the same way, often at the University of Edinburgh under the same men, such as Laycock and Skae. As the biographical notes reveal, these men often travelled in Britain and abroad, bringing other influences with them. However, what is more noticeable is the commonality of their social origins, training, attitudes, and career patterns. Most served their apprenticeship in a junior role in either a Royal Infirmary or an asylum, before working their way up the ranks, sometimes making it onto the Board of Commissioners.

The Medico-Psychological Association and the two Scottish asylum laboratories will be discussed below as more specific examples of the trans-institutional connections between asylums and the diffusion of ideas and people.

Medico-Psychological Association

In 1841, Dr. Samuel Hitch, Resident Physician of Gloucester General Lunatic Asylum, sent a circular to all Physicians and Medical Superintendents of the asylums of England, Ireland and Scotland stating that they should communicate and co-operate more freely to improve knowledge and treatment of the Insane. The founding of the Association of Medical Officers of Asylums and Hospitals for the Insane later that year saw the birth of an organisation to represent the professional

interests of alienists and to improve the plight of the mentally ill.[169] At the seventh annual meeting of the Association, one member advocated the establishment of a journal specifically for Association members. In 1853, Bucknill thus founded the *Asylum Journal*, which became the *Asylum Journal of Mental Science* a year later, dropping the word 'asylum' in its sixth year. The journal was the organ of the Association, founded as a means to provide cohesion and communication between alienists all over the country. As Henry Maudsley pointed out at the annual meeting in 1870, the Association was known 'in all parts of the world by reason of the journal [of Mental Science]'.[170] In this journal, the meetings were minuted in detail, while a 'notes and news' section provided the attitudes and interests of the Association members.

At the outset, very few Scottish alienists had become members, so that it was decided to establish a branch of the Association in Scotland to improve recruitment. W. A. F. Browne became the first Scottish Secretary. In 1865, the Association was transformed into the Medico-Psychological Association (MPA). Although it had the same objectives, the change of title was meant to reflect a growing confidence in its membership, and a recognition that the role of the Association needed to be strengthened and its influence extended outside the confines of asylums. By the end of the century, the membership had grown to almost 600, and the Association's organisational structure comprised three English divisions, and a division each for Scotland and Ireland.[171] The Presidents of the MPA were some of the most eminent alienists of the period, including John Conolly,[172] John Bucknill, and Daniel Hack Tuke, although the majority of the MPA members remain little known. The presidential addresses delivered at the annual MPA meetings allow important

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[169] E. Renvoize, 'The Association of Medical Officers of Asylums and Hospitals for the Insane, the Medico-Psychological Association, and their Presidents', in G. Berrios and H. Freeman (eds), *150 years of British Psychiatry, 1841-1991* (London, Gaskell, 1991), p.29.

[170] 'Proceedings of the Twenty-Fifth Annual General Meeting of the MPA', *Journal of Mental Science*, 16 (1870-1871), p.453.

[171] Renvoize, 'The Association', p.41.

[172] John Conolly (1794-1866) qualified from the University of Edinburgh in 1821, having chosen insanity as the subject of his thesis. Conolly worked in Stratford-on-Avon, before moving on to a less successful period at University College, London, publishing *The Indications of Insanity.* After a spell in general practice in Warwick and Birmingham, he was appointed to the post of Resident Physician at Hanwell Asylum in 1839, where he was to quickly abolish all forms of mechanical restraint. He went on to co-found Earlswood Asylum, and was also a founder member of the British Medical Association in 1832.

insights into the profession, their ideas and discussions of the major issues facing them. However, Turner argues that the MPA was a body composed of loosely knit individuals who owed their allegiance to the British Medical Association and their own specific interests more than to the Association. They played little part in any reform campaigns, such as those relating to alcohol, at least as a coherent body, although they did try to influence public opinion through Parliamentary pressure, the publication of their Journal, and other individual activities.[173]

Asylum Laboratories

As the nineteenth century drew to a close, a fear was developing that Scottish psychiatry was lagging behind that of Europe, particularly Germany. Whereas British alienists had become to a great extent administrators of large asylums, German physicians were part of a neuropsychiatric tradition and had a place in the clinics of university hospitals. The response in Edinburgh to the perceived Scottish deficiency was to call for both a pathological laboratory and the creation of wards in the Edinburgh Royal Infirmary for the reception of early cases of mental disorder.[174] The call for a psychiatric ward in the Royal Infirmary was ultimately unsuccessful, the proposal being rejected by the Board of Management of the Infirmary, which has continued to hold out against such a suggestion to the present day. However, with Clouston's encouragement, several asylums initially joined together to fund the Scottish Asylum Laboratory, which was opened in 1897 at 12 Bristo Place and rented temporarily from the Royal College of Physicians.[175] The laboratory was soon funded by 18 Royal and district asylums, particularly the REA, Gartnavel and Crichton, and was under the direction of Dr. W. Ford Robertson.[176] The aim of the

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[173] T. Turner, '"Not Worth Powder and Shot": The Public Profile of the Medico-Psychological Association, c.1851-1914', in G. Berrios and H. Freeman (eds), *150 years of British Psychiatry, 1841-1991* (London, Gaskell, 1991), p.9.

[174] A. Beveridge, 'Thomas Clouston and the Edinburgh School of Psychiatry', in G. Berrios and H. Freeman (eds), *150 Years of British Psychiatry, 1841-1991*, volume one (London, Royal College of Psychiatrists, 1991), p.380.

[175] See J. Ritchie, *History of the Laboratory of the Royal College of Physicians of Edinburgh* (Edinburgh, The Royal College of Physicians, 1953), pp.24-6.

[176] William Ford Robertson (1867-1923) held several Resident appointments, and in 1893 became pathologist to the REA. See chapter five for additional biographical details.

new venture was to encourage pathological research among asylum doctors, and to provide slides for clinical demonstrations, as well as to stimulate, support and facilitate scientific research of a similar nature in the individual asylums connected with it, rather than to suppress individual efforts.

Perceiving the benefits which had accrued from this laboratory and similar laboratories elsewhere, and probably inspired by the discovery of the organism that caused syphilis, it was decided that it would be advantageous to the West of Scotland to have similar facilities to that of Edinburgh. In 1909, the Scottish Western Asylums' Research Institute (SWARI) was founded in the grounds of Gartnavel, with Dr. Ivy MacKenzie[177] as its first Director. The Institute's initial objectives were 'to stimulate, organise and carry out research relating to all forms of nervous and mental disorder, including their pathology, prevention and treatment', as well as teaching medical officers and post-graduate students the methods of studying and treating nervous and mental disorders.[178] The SWARI was financed by both the district and Royal asylums of the West of Scotland.[179] Chapter five will investigate the workings of both of these laboratories in much greater depth.

Conclusion

It might seem the obvious conclusion that Royal asylums would enjoy a higher status, attract better and more faithful staff, and reflect newer trends in psychiatric care. Certainly, the Royals pioneered such advances in Scottish psychiatry as alliance with hospitals to provide out-patient psychiatric care, and laboratories to advance pathological knowledge of insanity. And both Royal asylums, the REA in particular, emerged from the nineteenth century as important teaching hospitals. They furthermore attracted some of the key figures involved in Scottish psychiatry to fill their posts. The demands of administration and over-crowding did not entirely

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[177] See chapter five for biographical details of Ivy MacKenzie (1877-1959).
[178] *Scottish Western Asylums' Research Minute Book*, 1931, GGHB21/1/1, p.1.
[179] After the creation of the NHS, the Institute was managed by the Board of Management for Gartnavel until 1960, when it was wound up and the residue of its funds transferred to the Henderson Research Scholarship.

compromise the commitment of the Royals to innovative clinical and pathological research. However, the pragmatics of everyday care and asylum management admittedly caused some distraction from such matters as pathology, leading to the development of the central laboratories to work specifically on this.[180]

Edinburgh acquired a fierce reputation for excellence in medical and psychiatric practice and research in the nineteenth and early twentieth-century period, attracting figures of international renown. The REA introduced the first Scottish teaching programme in psychiatry for students and nurses, and established the first Lectureship in Mental Diseases. Both Skae and Clouston made influential contributions to the classification and diagnosis of insanity. Such achievements have led Andrews to state that there can be little doubt that such coherence and significance constituted an outstanding 'Edinburgh School of Psychiatry', whereas although Glasgow mirrored some of these developments, it does not seem to have achieved the same sort of prominence, making no great contribution to diagnosis, nosology or mental pathology.[181]

However, early twentieth-century developments in Glaswegian psychiatry raised its status substantially. By 1917, Glasgow was the only university in Scotland to have both an endowed lectureship in Mental Diseases and an endowed scholarship in aetiological research into insanity. Furthermore, the success of Oswald's psychiatric out-patient clinic at Glasgow's Western Infirmary was in marked contrast to Edinburgh, where calls for a psychiatric clinic failed. Thus Edinburgh alienists had to continue to rely on teaching at the REA and the extramural clinic at Stirling, while the Glasgow asylums could utilise the services of a centralised clinic. And by the 1920s and 1930s, David Henderson was arguably heading a psychiatric community which was on a par with that found in Edinburgh, building on Oswald's developments and also publishing from his rich clinical experience gleaned in Britain, Germany, and the United States. Yet, any talk of a distinct Edinburgh or Glasgow 'school' misses the point that the barrier between east and west is artificial.

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[180] Of course, it should be added that valuable work on mental pathology was also being completed outside asylumdom, such as Joseph Coats (1846-99), pathologist to the Glasgow infirmaries, who published on a wide range of mental and neuropathological subjects.

[181] J. Andrews, 'A Failure to Flourish? David Yellowlees and the Glasgow School of Psychiatry', part 1, *History of Psychiatry*, 8 (1997), p.177.

Particularly in respect of staff, the relationship has been incestuous to say the least, with a constant exchange of staff between district and Royal asylums, and between Edinburgh and Glasgow, for both training and employment.

Turning to the district asylums, they began as the poor cousins of the Royals, with a lower profile and more transitory staffing. Of course some of them attracted figures who went on to gain real prominence within Scottish psychiatry, with medical posts proving more secure and prestigious by the turn of the century. The creation of these asylums arguably allowed for the expansion of psychiatry as a profession, and saw the emergence of rather more prominent medical figures at their heads;[182] for example, the first Physician Superintendent of Woodilee, James Rutherford, who went on to take charge of the Crichton Royal and act as Honorary Secretary of the Scottish MPA. Archibald Campbell served as Medical Superintendent of the Glasgow District Asylum, Bothwell, while publishing prolifically and being instrumental in MPA affairs, and was the only nineteenth-century Glaswegian alienist to produce a textbook of general psychiatry.[183] Furthermore, late-nineteenth century developments slowly raised the prestige of the district asylums. For example, these institutions were pre-eminent in utilising new forms of work. Woodilee was designed as a farm Asylum, a form of institution that was seen as ideal and up-to-date by the Commissioners at this time. Woodilee was also the first Scottish asylum to utilise the Brabazon Employment Scheme, from which Occupational Therapy is regarded as developing.

In terms of similarities between these institutions and society, the whole administrative structure of the asylum reflected the structure of other lay and medical institutions, with their Board and quarterly minutes. For a patient inside the asylum, the socio-economic structure of society was replicated inside, with strict classification of patients along both class and gender lines. Patients' class dictated the facilities and recreations made available to them, as well as the tasks they were expected to undertake. Jobs conformed to class and gender roles outside the institution. Men who had trades were able to pursue them; while women were sent to the laundry and sewing rooms. The middle classes were not expected to work. Thus,

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[182] Andrews and Smith, 'The Evolution of Psychiatry', p.314.
[183] *Ibid.*, p.315.

the Royal and district institutions were generally successful in the enterprise of providing a 'quasi-normal' structure to asylum life, in terms of their work and recreational milieu.[184]

[184] Rice, 'Madness and Industrial Society', p469.

Chapter Four: Clinical Diagnosis

This chapter will examine nineteenth-century diagnoses of GPI. Any study of diagnosis must consider the classification of diseases, since all diagnosis takes place in relation to a framework into which cases can be placed. Thus, in the words of Seymour, scientific order is constructed out of the naturally arbitrary chaos of health and illness.[1] Those symptoms associated with GPI between 1880 and 1910, that is before the use of laboratory methods to aid diagnosis, will be discussed. These have been divided into three sections – mental, physical and physiognomonic. The issue of differential diagnosis will then be explored. The significant number of symptoms exhibited by general paralytics allowed the disease to be easily confused with other forms of insanity such as mania, melancholia and dementia. Thus, most nineteenth-century psychiatric textbooks offered methods of differentiating GPI from other disorders.

The historian Hurn has asserted that GPI maintained relative conceptual stability, even as physicians' images and interpretations of it changed.[2] And indeed, for the majority of the Scottish general paralytics, a specific and tangible cluster of symptoms constituted the diagnosis of GPI. And yet, the sub-sample[3] of Scottish cases explored in this chapter reveals that many of those patients who received GPI as their final diagnosis were initially diagnosed with a different disorder, such as mania or dementia. One explanation to account for this is that GPI was seen to be a 'catch all' category in that there was a profusion of symptoms associated with the disease, as it progressed through its various stages. In particular, mental conditions such as mania and melancholia shared many symptoms in common, and could thus be confused with GPI. This all made the process of diagnosis a complicated one, and paints a picture of GPI as an unstable and difficult diagnostic category.

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[1] As cited in G. Canguilhem, *The Normal and the Pathological* (New York, Zone Books, 1989).
[2] See J. Hurn, 'The History of General Paralysis of the Insane in Britain, 1830 to 1950', Ph.D. thesis, University of London (1998), p.16.
[3] Since this chapter deals with the period up until the use of the Wassermann test, only those patients in the sample who pre-date laboratory methods will be considered, where appropriate. It is thus a sub-sample of the database patients.

Nosology, classification, and nomenclature are closely related to diagnosis. Nosology can be defined as the theoretical study or science of disease classifications, which may be considered as analogous to taxonomy in biology. Included within the concept of nosology is classification, which is the ordering of diseases into groups on the basis of their relationships as determined by similarity, contiguity, or both. Like diagnosis, classification refers to both a process and a result. Nomenclature is the system of names used in any given classification of diseases.[4]

Every time a physician thinks about a patient or makes a diagnosis, he must consider an individual and at the same time generalise as much as possible about his condition so that it can be classified and a diagnosis made. The reality of the individual patient and the abstraction of the diagnosis form two poles of an axis along which the physician's mind shuttles during the process.[5] In 1925, Alfred North Whitehead observed that 'classification is a halfway house between the immediate concreteness of the individual thing and the complete abstraction of mathematical notions'.[6] Knud Faber went further, explaining that:

> All concepts of disease, like all other concepts denoting species, are human abstractions, not objective entities. Philosophically speaking, everything is fluent; but to the physician who is to live and act in the world, it is necessary to have definite categories of disease to serve as guides and tools.[7]

For Faber then, classifications of disease were not classifications of real entities. The measure of their truth was the pragmatic one of the degree to which they improved the precision of prognosis and treatment. They could be changed when new information permitted 'better' or more useful ways of classifying. After all, fuzziness is a common characteristic of everyday life and disease, but static

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[4] R. Engle and B. Davis, 'Medical Diagnosis: Present, Past, and Future', *Archives of Internal Medicine*, 112 (1963), p.513.
[5] Cited in *Ibid.*, p.520.
[6] Cited in S. Kunitz, 'Classifications in Medicine', in R. Maulitz and D. Long (eds), *Grand Rounds: One Hundred Years of Internal Medicine* (Philadelphia, University of Pennsylvania Press, 1988), p.279.
[7] *Ibid.*, p.284.

classificatory systems cannot fully encapsulate this. Models are ways of imposing meaning on the apparent chaos of the natural world. Patterns can be discovered, or created, in any area of life, including the overall order of the cosmos, the system of natural kinds of plants and animals, the classificatory schemes of libraries, as well as the *ICD* scheme for disease.[8] Classifications, by their very nature, have to decide which category to ascribe an individual or item to, and in the process both reflect and create theories of society. Thus classification can never be objective or value-free. It constructs, as well as organises, ideas.

Diagnosis is such an established part of medical practice that few physicians consider whether there is general agreement about what is meant by the term; whether diagnosis is an art, a science, or both; and whether disease classificatory systems are composed of clearly defined disease entities. Generally speaking, diagnosis has three components. First of all there must be a pre-existing frame for the diagnosis; then there is the particular entity – a sick patient – to be diagnosed; and finally there is the deliberate judgement that the object in question belongs in *this* category rather than *that*.[9] The pigeonholes may be sharply defined, or the boxes may have fuzzy edges, but even the most poorly defined must have some distinguishing marks or qualities which characterise them and serve to distinguish them from an adjacent class. We then look at the particular object, note its qualities, compare them with the properties which define the various classes, and finally reach a decision whether the particular object belongs in *this* class or *that.* It is this decision that constitutes the diagnosis.

Diagnosis can be viewed as a process for comparing the attributes of a particular patient with the attributes of a particular disease definition, and applying a measure by means of which we can express the degree of similarity between the two. We can then select the diseases that most clearly resemble the patient's, discard those that seem unlikely, and create *a differential diagnosis*. This is the list of candidate diagnoses that best fit what is known about the patient at a given stage of the diagnostic process. As additional clinical attributes become known, this

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[8] Each edition of the *International Classification of Diseases* (ICD) provides a uniform classification scheme for diseases, symptoms, and causes of death. Subsequent editions show the continuing extension of what counts as disease, or what needs classifying/reclassifying.

[9] L. King, 'What is a Diagnosis?', *Journal of the American Medical Association*, 202:2 (1967), p.714.

differential diagnosis may change. Newly-found attributes may be incompatible with a disease on the list, permitting us to reject it, or they may add further diseases to the list. The process of diagnosis, however, is never irreversible. Upon receipt of new and conflicting data, the physician will quickly return to earlier stages of the inference process. [10]

There is no doubt of the importance placed on diagnosis by physicians and by laymen alike. The satisfaction felt by the physician when he is able to assign a name, hopefully the correct one, to the patient's illness is matched only by the layman's relief when he hears that he is suffering from aplastic anemia and not leukemia.[11] The person diagnosed is then placed within a set of social roles and expectations, in a particular social space, framed by particular rights and duties.[12] When we place the patient in a particular diagnostic category, we usually know a great deal about the pathogenesis of his disease, the best way to treat him, and the probable outcome.

The remaining aspect to diagnosis is the practical application of the diagnostic process. Diagnosis is a practice that is socially transmitted. The major modes of transmission are the textbook, clinique, and journal. Through these mediums of learning, once a medical student has seen half a dozen cases of malaria, he or she should be able to recognise this disease accurately in a typical established case. There are certain key signs to look out for to aid our decisions and to differentiate between potential diagnoses. As such, clinical diagnosis depends not upon all the signs, but upon the *crucial* signs. Once recognition has begun, such as the gait of a patient with Parkinson's disease, it subconsciously draws our attention to other features in our search for supporting evidence.[13] In medicine, such knowledge can readily be taught and examined, and thus forms a large part of the medical curriculum. However, diagnosis appears to require a further step. It requires an exercise of recognition or intuition, an appreciation that a particular

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[10] M. Blois, *Information and Medicine: The Nature of Medical Descriptions* (Berkeley, University of California Press, 1984), p.149.
[11] Engle and Davis, 'Medical Diagnosis', p.512.
[12] J. Peset and D. Gracia (eds), *The Ethics of Diagnosis* (Netherlands, Kluwer Academic Publishers, 1992), pp.4-5.
[13] Blois, *Information and Medicine*, p.137.

example does in fact have the qualities or features which characterise a particular class.

Diagnosis requires a framework of categories and also knowledge about these categories or classes. But this is not enough. Diagnosis also requires the specific intuition, the specific decision that *this* particular example does in fact possess the features a, b, and c, which characterise category X.[14] The intuition is an act of judgement. We can teach *knowledge* about a subject, and textbooks and journals are filled with such information. However, teaching *judgement* or *intuition* is clearly more problematic.

GPI as a Classificatory Category

GPI, including its various synonyms, was a constant psychiatric category in Scottish asylums throughout the century after 1850. However, as the REA in particular demonstrates,[15] so many patients were given this label relative to other Scottish asylums, and the number of associated symptoms was so large, that some physicians began to suspect that other similar disorders, which were in fact quite distinct diseases, were being erroneously grouped with GPI. I refer here to other syphilis-related disorders like cerebral syphilis, rather than diseases like mania and melancholia, which were also regularly confused with GPI. As William Gibb, a physician based at Glamorgan County Asylum, stated, it was not possible to place GPI into a classificatory system founded upon symptomatology, utilising the typical groups like dementia, cretinism, mania, and delusional insanity.[16] GPI, being characterised by mental excitement, delusions, dementia, and mental weakness, could not be said to belong exclusively to any one of them. Indeed the German

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[14] King, 'What is a Diagnosis', p.717.
[15] In the period from 1880 to 1930, a significant 1416 patients were admitted to the REA with a GPI diagnosis (not including the 38 patients re-diagnosed with GPI at post-mortem).
[16] W. Gibb, 'On Some of the Features of General Paralysis of the Insane', M.D. thesis, University of Glasgow (1885), p.45.

alienist, Westphal, remarked that 'the idea of general paralysis is nothing but a complex of symptoms faultily defined'.[17]

This subdivision of GPI cases within psychiatry principally involved differentiating it from syphilitic insanity, tabes with psychosis, and cerebral syphilis. Thus, during this period, we see the development and widespread use of the term 'neurosyphilis', a generic term to encapsulate those disorders that were (retrospectively) deemed to have a syphilitic aetiology. Even with its substantial number of general paralytics, the REA also had the most numerically significant syphilis-related category other than GPI – *syphilitic insanity*. No other Scottish asylum had such a class. On no occasion was this diagnosis confused with GPI in the case notes, or altered to GPI during a patient's asylum stay.

As a diagnostic category in Gartnavel, *tabes with psychosis* first appeared in 1921, following David Henderson's appointment as Physician Superintendent. However, *locomotor ataxia* was utilised before his arrival, although in a purely physical context. By including tabes as a psychiatric classification, as chapter two discussed, Henderson was in the minority, since the vast majority of British alienists did not consider tabes to have mental symptoms. Instead, any patient mentally afflicted would be classified as tabetic GPI or simply GPI. Henderson's interest in subdividing supposed cases of GPI seems to have been because:

> practically every imaginable mental symptom-complex may occur in general paralysis, and therefore I believe that a distinct necessity exists for a more precise definition of the limits of general paralysis.[18]

A start had been made in subdividing the great lump of cases which constituted the seemingly catch-all category of 'neurosyphilitic insanity'. In this period, all four asylums admitted only a tiny number of tabes-related cases.

Cerebral syphilis did not appear as a diagnostic label in the Gartnavel Annual Reports and case notes until 1922, once again soon after Henderson had become Physician Superintendent. In this year, one patient was admitted to Gartnavel with

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[17] *Ibid.*
[18] D. Henderson, 'The Diagnosis of Cerebral Syphilis', *Review of Neurology and Psychiatry*, 9 (1911), p.530.

this diagnosis. No other patient was admitted to any of the four asylums with this diagnosis. Thus, although some of these allied neurosyphilitic disorders were numerically small in the four asylums, they illustrate the point made above. In fashioning and developing classificatory schemes, there are always cases which do not fit neatly into pigeonholes, so that the schemes must constantly adapt to be as all-inclusive as possible, but be flexible enough to develop as cases no longer fit them neatly. Where a category becomes too large or less specified, ways must be found of subdividing the cases to create more defined classes.

The Symptoms of GPI

Before outlining the main symptoms that were associated with GPI, a useful *Clinique* lecture of REA Physician Superintendent George Robertson, dating from 1920, gives a good sense of the clinical process which physicians went through to diagnose GPI.[19] Using a 37-year-old man as a typical example of the disease, Robertson demonstrated the patient's physical and mental symptoms to the audience of medical students. Starting with the mental symptoms, Robertson drew attention to the man's elated and grandiose mood, his mental incoordination and deterioration of intellect, loss of memory and impairment of judgement. He then moved on to the physical signs, demonstrating the Argyll-Robertson phenomenon of the eyes,[20] staggering gait, tremor of hands, tongue and lips, and affected speech. Some patients' progress notes recorded that they were typical GPIs, allowing us an insight into what were considered to be the 'typical' clinical features of GPI. One of these patients, William N.,[21] a 47 year old married coal miner admitted to Rosslynlee in October 1923:

> was certified as a person of unsound mind exhibiting many of the distinctive features of General Paralysis of the Insane - being restless, sleepless, maniacal and troublesome, with grand ideas of his wealth,

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[19] G. Robertson, *Clinique on GPI*, 25 February 1920, LHSA GD16, pp.5-15.
[20] This phenomenon was named after the distinguished Scottish eye surgeon Douglas Argyll Robertson (1837-1909). The phenomenon referred to pupillary changes, consisting of irregularity of outline, inequality of size, and impairment (diminution or absence) of the light and convergence reflexes.
[21] All patient names have been changed to preserve anonymity.

> position and enormous strength. He was then in feeble health, ataxic in his gait and incoherent in his speech. Tongue tremulous, pupils unequal and not reacting to light.[22]

Each of these symptoms will be discussed in more detail below.

Mental Symptoms

The most written-about symptom of GPI was probably the delusions, particularly the classical type of grandiose delusions. Such delusions usually related to ideas of importance, benevolence, and wealth. Even the most austere Physician Superintendent might find himself warming towards a patient who, as Skae described:

> offers a cheque for £75, 000 for the purchase of the asylum and promises to endow it with unbounded munificence, and to convert it into a paradise of brilliancy and bliss ....[23]

Grandiose delusions tended to indicate the patient's weakness of mind and lack of insight into their own condition. In fact, when this symptom was missing in a patient, the physician often felt it necessary to draw attention to this fact. For example John R., a 45 year old married ship's captain admitted to the REA in August 1897, was 'a case of GP without the usual expansive delusions'.[24] Similarly, Alexander H., a 32 year old single mason admitted in April 1894, had 'some unmistakable signs of GP as regards his eyes and tremors of the tongue, but emotionally he is depressed and has no exaltation'.[25]

Much more typical were those patients exhibiting delusions of grandeur. James S., a 40 year old married beer merchant admitted in July 1885:

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[22] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/33/103.
[23] D. Skae, 'Contributions to the Natural History of General Paralysis', *Edinburgh Medical Journal*, 5 (1859-60), p.894.
[24] *Royal Edinburgh Asylum Case Book*, LHB7/51/70/133.
[25] *Ibid.*, LHB7/51/61/559.

> has been buying great quantities of childrens' toys and fruit and regularly he has been sending in large quantities to his house and he has also been buying trinkets for his own adornment and when he arrived here he had a telescope and some other useless articles and indeed his whole aspect, his well pleased, contented, happy manner, his unconcern and his expansive ideas suggested at once General Paresis.[26]

Robert I., a 48 year old married farm labourer admitted in February 1896, had 'delusions such as that America belongs to him because he bought it'.[27] William M., a 44 year old married patient admitted in April 1893, had 'married 500 women or "slept 80 hours" nearly every morning; he speaks all the languages; in fact he "made" them; then he mutters inarticulately and calls it Japanese'.[28] John N., a 35 year old married miner admitted in March 1897, had the: 'Delusion that he is related to the Queen. Says he intends to steal the Kohinoor diamond sell it and drink the proceeds.'[29] Alexander W., a 30 year old single physician admitted to Gartnavel in May 1898:

> is full of delusions of grandeur. Believes that he has a practice worth ten millions a year - that he can give people new brains, lungs and bodies. That he has abolished death from the works: that he is himself the almighty: that he rules the world as Emperor of all the countries. Every other statement he makes is equally exaggerated and ludicrously unfounded in fact.[30]

He furthermore: 'Says his medical works on nerve diseases are on all bookstalls. He is able to remove the brain if diseased and to substitute another'.

However, there were also delusions and hallucinations of suspicion or persecution. Elizabeth I., a 40 year old married domestic admitted in September 1905, 'says people come through the wall at night - when she lights the lamp they disappear'.[31] James Y., a 40 year old married cloth inspector admitted in October 1887:

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[26] *Glasgow Royal Asylum Case Book*, GGHB13/5/124/133.
[27] *Barony Parochial Asylum Case Book*, GGHB30/4/3/453.
[28] *Royal Edinburgh Asylum Case Book*, LHB7/51/57/317.
[29] *Ibid.*, LHB7/51/69/277.
[30] *Glasgow Royal Asylum Case Book*, GGHB13/5/132/85.
[31] *Barony Parochial Asylum Case Book*, GGHB30/5/12/36.

> imagines that he has been poisoned, that his father, mother, wife and other friends have a plot against his life. States that he would like to kill the Prince of Wales, and that he has sent him a challenge to fight.[32]

Robert N., a 50 year old widower admitted to December 1896, 'imagines that he has killed many people, that they are looking at him through the wall'.[33] Margaret G., a 16 year old patient admitted in July 1890, had 'the delusion that there is something down her throat [which] prevents her swallowing. As a result of this she has to be artificially fed'.[34] William S., a 46 year old married fishing tackle maker admitted in June 1889: 'Complains of being tormented by devils and supposes his wife to be in league with them. Says he feels something wrong with his head.'[35] John S., a 33 year old single commercial traveller admitted in August 1881: 'Says that "devils" come and beat him; that he is made of diamonds; that he changes his flesh every few weeks, and that yesterday walked 60 miles.'[36] Alexander G., a 45 year old single labourer admitted in June 1883: 'Thinks the clinical thermometer is an instrument meant to kill him, is full of suspicion regarding everyone about him, and thinks they are going to injure him in some way'.[37] James E., a 35 year old married miner admitted in October 1897: 'Saw the devil under the bed – "the man with cloven feet".'[38] And Robert D., a 45 year old married waiter admitted in July 1896, was 'suspicious of his wife but this may have a sound origin' according to one of the asylum admitting physicians.[39]

Furthermore, there were the dementia-related symptoms. There was commonly a loss of memory. Recent events could not be remembered, while remote happenings might still be recounted with accuracy until the later stages of the disease. The patient might forget that he had just eaten his dinner, and be confused about the time of day. William Y., a 34 year old single watchmaker and scientific instrument maker admitted in March 1909, had a poor memory and 'does not know

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[32] *Ibid.*, GGHB30/4/2/272.
[33] *Ibid.*, GGHB30/4/4/113.
[34] *Royal Edinburgh Asylum Case Book*, LHB7/51/53/379.
[35] *Ibid.*, LHB7/51/52/159.
[36] *Ibid.*, LHB7/51/38/261.
[37] *Ibid.*, LHB7/51/40/470.
[38] *Ibid.*, LHB7/51/69/685.
[39] *Ibid.*, LHB7/51/67/529.

the year he was born and says this is 1899 when told he was wrong says it is 1999'.[40] Susan N., a 43 year old married housekeeper admitted in July 1883: 'Had no memory for time and did not know the day of the week.'[41] Although the patient might behave erratically, his personality usually remained intact for a considerable length of time, and routine duties could be carried out. With the advance of the illness, however, irritability, loss of long-term memory, and slovenliness usually became more obvious.

Extreme restlessness was another common symptom of the disease. Such patients were very troublesome to nurse, 'on account of their restless, aimless, and purposeless excursions about the room'.[42] Mary D., a 35 year old married 'lady' admitted to Gartnavel in December 1882, was: 'Restless, excited and very incoherent, could not answer the simplest question and was altogether in a very helpless condition'.[43] Allied to this, patients could be destructive and filthy, tearing their clothes and breaking windows and furniture. They could be quite indifferent to the feelings of others, and have their moral sense eroded. John S., a 36 year old married bookbinder admitted to the REA in December 1880, was 'very restless, noisy and destructive at nights, tearing his blankets into fragments and scattering about the contents of his mattress .... Has been smashing windows lately'.[44] The emotional side of the general paralytic might also be exaggerated. There was perceived to be a noticeable disposition to indulge in fits of crying and a proneness to shed tears at unexpected moments. Alexander N., a 51 year old married former umbrella manufacturer admitted to Gartnavel in October 1894, was: 'Very emotional and cries because as he says God will not give him all he wants.'[45] Similarly, Jane L., a 42 year old single domestic servant admitted to Rosslynlee in September 1905, was: 'Morbidly emotional and has great fits of weeping'.[46]

A final symptom of GPI was larceny and hoarding other peoples' belongings. In their enfeebled state, they would collect other people's goods, or simply rubbish

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[40] *Glasgow Royal Asylum Case Book*, GGHB13/5/146/241.
[41] *Ibid.*, GGHB13/5/102/399.
[42] J. MacLachlan, 'General Paralysis of the Insane', *Glasgow Medical Journal*, 1 (1897), p.424.
[43] *Glasgow Royal Asylum Case Book*, GGHB13/5/102/381.
[44] *Royal Edinburgh Asylum Case Book*, LHB7/51/34/751.
[45] *Glasgow Royal Asylum Case Book*, GGHB13/5/129/182
[46] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/20/365.

like old bread crusts, imagining them to be valuable. One patient at the REA would get pairs of extra-large socks and shoes, then stuff them with various things he had picked up in different places.[47] The general paralytic had a reputation for being a foolish and unmalicious thief who would make no attempt to conceal his crimes, and who tended to hand back stolen items with good humour if challenged. However, prior to their diagnosis, such patients might get into trouble over such actions. An 1873 journal article documents six cases in which:

> general paralytics had committed theft after the onset of the disease, and had, consequently, suffered a greater or less term of imprisonment, the disease remaining unrecognised both before the trial and for some considerable time afterwards.[48]

J. Burman, Resident Medical Officer and Superintendent of the Wilts County Lunatic Asylum, showed that this was merely an early symptom of their disease, given their previous good character and absence of reasonable motive for the crime. He summed up that it was not difficult to understand a paralytic's propensity to steal given the abnormal exaggeration of their ideas as to wealth and property, and 'the blunting of the reasoning faculties and inability to properly comprehend consequences', all that was necessary as a 'strong predisposition to acts of larceny'.[49]

Thus, James E., a 40 year old married tailor admitted to Rosslynlee in July 1908: 'Admits picking up rags and handkerchiefs off the street and bringing them home and using them.'[50] Such a symptom might explain why the admission certificates of 16 of the sub-sample of Scottish patients contained reference to a police station or prison. Robert E., a 32 year old single fireman admitted to Woodilee in December 1903, had been imprisoned in Barlinnie prison for theft, before being certified insane and transferred to the asylum.[51] William E., a 36 year old married tailor admitted in March 1895, was nearly arrested but then seen to be a

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[47] G. Robertson, *Clinique on GPI*, 25 February 1920, LHSA GD16, p.19.
[48] J. Wilkie, 'Some Further Cases of General Paralytics Committed to Prison for Larceny, with Remarks', *Journal of Mental Science*, 20 (1874-5), p.246.
[49] *Ibid.*, p.251.
[50] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/30/145.
[51] *Barony Parochial Asylum Case Book*, GGHB30/4/55/46.

general paralytic and admitted to Woodilee instead.[52] John D., a 30 year old single sailor and labourer admitted in September 1898, was apprehended by the police for a different reason. His delusions caused him to throw a stone through the window of a house, under the idea that the lady inside was annoying him. He was transferred from the police station to the REA.[53] Alexander Y., a 38 year old married moulder admitted in October 1910, 'fell into the hands of the police through disorderly conduct, and he is somewhat excitable, noisy and resistive at times'.[54]

Physical Symptoms

The most important physical diagnostic sign of GPI was the fully developed Argyll-Robertson phenomenon, or complete loss of the light reaction in one or both eyes. Although normal pupils were present in up to 10 per cent of early cases, towards the end of the illness almost all paralytics were expected to have pupillary abnormalities.[55] For example, James C., a 39 year old single labourer admitted in June 1890, had 'pupils ... very variable and abnormal - often unequal and irregular in shape'.[56] With Elizabeth I., a 40 year old married domestic admitted in June 1890: 'The pupillary phenomenon are rather striking. They are equal and slightly dilated. Reaction to light is imperfect and accommodation is equally defective as stimulus.'[57]

Another early symptom was the peculiar impairment of the power of articulation. The patient would often 'speak thick', slur or mumble certain words, exactly like a person who was slightly intoxicated. The disorder of speech was so typical that, as Bruetsch claims, a correct diagnosis could often be made as the patient talked, and this defect was certainly one of the main symptoms on which

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[52] *Ibid.*, GGHB30/4/3/287.
[53] *Royal Edinburgh Asylum Case Book*, LHB7/51/71/481.
[54] *Barony Parochial Asylum Case Book*, GGHB30/4/28/11.
[55] W. Bruetsch, 'Neurosyphilitic Conditions: General Paralysis, General Paresis, Dementia Paralytica', in S. Arieti (ed.), *American Handbook of Psychiatry* (New York, Basic Books, 1974), p.140.
[56] *Royal Edinburgh Asylum Case Book*, LHB7/51/52/723.
[57] *Barony Parochial Asylum Case Book*, GGHB30/4/12/36.

alienists depended for diagnosis.[58] Although this symptom could often be recognised simply during conversation, within the physical examination on admission, test phrases such as 'British Constitution', 'Methodist Episcopal Church', 'Electricity' and 'Hippopotamus' were employed to reveal the disturbance. If asked to say 'trigonometrical', a patient would tend to say 'trigomometrical' or 'trigonometical' instead. As the disease progressed, the patient would be unable to form sentences, with speech completely unintelligible by the terminal stage.

This symptom was so characteristic and associated with GPI that a common phrase in the case notes is simply 'speech like a GPI', rather than describing the qualities of that speech. The speech of Margaret S., a 44 year old married housewife admitted in December 1898, 'resembles that of GP, she can only use a few words eg "fine" - in answer to "how are you?"'[59] Susan Y., a 43 year old married housewife admitted in August 1896, had: 'Speech very markedly hesitating and slurring (GP) and characteristic whining tone, eg himapomatomusis (hippopotamus): general palal-I-silus.'[60] Robert L., a 36 year old single labourer admitted in August 1886, had: 'Articulation very thick, slurred and hesitating, just like that of an advanced case of General Paralysis'.[61] William L., a 33 year old married clerk admitted in May 1886, was: 'Very reticent, but when he does speak the tremulous character of his articulation is very striking. When asked how he is says f-f-f-ine in a stuttery way very like a general paralytic.'[62] John T., a 51 year old married cooper admitted in January 1909, had problems with his speech: 'the articulation is very defective, being slow, slurring and coarsely tremulous and it is with difficulty that some words can be made out'.[63] Alexander E., a 38 year old single theatrical manager admitted in October 1895, had an affection of his speech, 'phrases such as "The National Hospital for the Paralysed and Epileptic" being to him an utter impossibility'.[64]

Related to this was the tendency of a patient to tremble. In speaking, the lips were often tremulous, 'not unlike those of a person about to burst into passionate

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[58] Bruetsch, 'Neurosyphilitic Conditions', p.140.
[59] *Royal Edinburgh Asylum Case Book*, LHB7/51/72/853.
[60] *Ibid.*, LHB7/51/66/881. It is unclear why this patient stated her diagnosis.
[61] *Ibid.*, LHB7/51/40/410.
[62] *Ibid.*, LHB7/51/45/535.
[63] *Barony Parochial Asylum Case Book*, GGHB30/4/23/10.
[64] *Glasgow Royal Asylum Case Book*, GGHB13/5/130/88.

weeping'.[65] A fine or coarse rapid tremor, particularly of the extended fingers, tongue, and facial muscles, was often present. When the tongue was protruded, it tended to tremble or waver from side to side, as if beyond control. James H., a 36 year old single saddler admitted in May 1880, had: 'Lips very tremulous, so that the disease is probably general paralysis.'[66] Similarly, Robert R., a 26 year old single brewer's labourer admitted in December 1894, had the statement: 'His pupils and lips present no symptoms of paresis or incoordination but his tongue is tremulous. The tremors suggest GP.'[67] William D., a 40 year old married retired wine and spirit merchant admitted in February 1903, 'has marked tremor of the arms, legs and tongue indicative of General Paralysis'.[68] John E., a 49 year old widowed retired sea captain admitted in June 1892, had:

> a marked tremor of the hands and fingers. There is no actual paralysis but a condition of general weakness. The tongue is large and flabby and very unsteady, and a finer tremor is also present in the muscle of the organ. The lips are tremulous.[69]

The patient's handwriting would be commonly affected, in an analogous manner to the speech. In such cases, it was unsteady, lacked firmness in the lines, was disorderly looking, and the ends of the words, or whole words, were omitted. Very rarely would a patient recognise their mistakes. As the disease progressed, only an illegible scribble would be produced, as indicated by those patients' letters that were retained in the case notes and were either non sensical or entirely indecipherable. Thus physicians used case note phrases like 'the typical general paralytic calligraphy'. The writing of Alexander R., a 45 year old married ship's captain admitted in August 1897, was 'peculiar in that he leaves out words and letters'. [70] James N., a 57 year old married naval seaman admitted in November 1903, had this symptom: 'In writing his letters were shaky, incomplete, disturbed and

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[65] J. Bucknill and D. Tuke, *A Manual of Psychological Medicine* (London, John Churchill, 1858), p.332.
[66] *Royal Edinburgh Asylum Case Book*, LHB7/51/34/439.
[67] *Ibid.*, LHB7/51/63/257.
[68] *Glasgow Royal Asylum Case Book*, GGHB13/5/135/15.
[69] *Ibid.*, GGHB13/5/127/298.
[70] *Royal Edinburgh Asylum Case Book*, LHB7/51/70/133.

almost illegible.'[71] Mary G., a 26 year old married laundress admitted in May 1903, had the same symptom: 'Her writing is so shaky that it is almost impossible to read.'[72] However, this calligraphy test was not of such diagnostic value, given that the standard of calligraphy varied greatly in healthy people. As a practical test within the asylum, it might also fail due to patient nervousness or distress.

Another noticeable physical disturbance was that of gait, which usually became obvious somewhat later in the disease. This disturbance resulted in an irregular swaying walk with legs far apart, in an unsteady manner like a drunken man. Robert N., a 38 year old married carter admitted in February 1898, had this symptom: 'His gait is so ataxic that he is unable to walk alone. When assisted he throws his legs forward in a jerky manner and plants his feet in a very characteristic manner.'[73] William N., a 42 year old married ship carpenter admitted in December 1899, had this symptom, for: 'His gait is a characteristic one - he struts along piper fashion with the shoulders square.'[74] Mary S., a 44 year old married housewife admitted in December 1898, had a: 'Very tottering gait - slightest touch sends her over.'[75] John D., a 50 year old married ironmonger admitted in August 1918, had a gait which was 'staggering and uncertain, resulting in minor accidents daily'.[76] In more detail, with Alexander C., a 43 year old married house factor admitted in October 1885, his:

> Gait raises the question of general paralysis. He walks on a broad base and lurches a good deal, both in progression and in turning. He can stand well with his eyes shut but cannot walk on a band about four inches broad.[77]

However, the most severe motor disturbances were the convulsions and apoplectic phenomena. They could appear at any stage of the disease, and were present in up to 65 per cent of cases.[78] Finally, the patient would become bedridden,

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[71] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/27/11.
[72] *Barony Parochial Asylum Case Book*, GGHB30/4/9/45.
[73] *Ibid.*, GGHB30/4/4/298.
[74] *Royal Edinburgh Asylum Case Book*, LHB7/51/75/533.
[75] *Ibid.*, LHB7/51/72/853.
[76] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/30/150.
[77] *Glasgow Royal Asylum Case Book*, GGHB13/5/124/197.
[78] Bruetsch, 'Neurosyphilitic Conditions', p.141.

with a complete loss of intellectual and physical functions. Incontinence of the urine would appear, with the bowels becoming sluggish. Loss of consciousness and a series of convulsions usually finished the patient off. James G., a 39 year old single coal merchant admitted in September 1885:

> has been in the third stage of the disease, completely paralysed for the last ten weeks. Two days ago was seized with congestive attacks, characterised by convulsions, at first confined to the right side, involving chiefly the upper limbs and the head which was turned to the right side and the eyes inhibited all concomitant deviation to the right: the left upper limb was afterwards convulsed also. He gradually sank and died.[79]

Jane T., a 41 year old married housewife admitted in August 1888: 'Has evidently had a "congestive attack", and is, today, helpless, speechless, and unable to swallow.'[80] Robert N., a 49 year old married paper factory worker admitted in December 1894, 'had an epileptiform attack, recovering consciousness then passing into another. He had four of these altogether. He died at 11.15pm'.[81] Elizabeth S., a 40 year old married dealer admitted in June 1887: 'Was stated by Attendant to have had two "epileptic fits", after which her speech became thick and stupid, and her pupils were found to be unequal .... The "epileptic fits" were probably congestive attacks'.[82] Such characteristic seizures sometimes led physicians to spot the other physical symptoms of GPI, leading to a post-mortem diagnosis of GPI.

Physiognomy

Physiognomy, the study of human characteristics and personality based on facial configuration, has been debated for centuries. However, in the mid-eighteenth century, the Swiss pastor Johann Caspar Lavater (1741-1801) formalised its concepts

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[79] *Royal Edinburgh Asylum Case Book*, LHB7/51/45/143.
[80] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/9/117.
[81] *Ibid.*, LHB33/13/13/225.
[82] *Barony Parochial Asylum Case Book*, GGHB30/4/2/303.

and wrote a classic text on the subject.[83] And by 1819, Rees's *Cyclopaedia* defined physiognomy as:

> the art of knowing the humour, temperament or dispositions of a person, from observation of the lines of his face, and the character of its members or features; or of designating the powers and dispositions of the mind by a peculiar combination of the features.[84]

Some physicians used it to diagnose or categorise their patients, while others simply used it as an aid in seeking additional clues as to the nature of their patients' illnesses. By the early-nineteenth century, physiognomy was becoming increasingly popular with physicians, for as Bucknill and Tuke stated, no physician could 'practise his art satisfactorily and successfully unless he' was a good physiognomist.[85]

Although physiognomy was seen as an aid to the study of medicine generally, Lavater recommended the student of physiognomy to commence with the insane, because they afforded to his art 'extreme and crucial instances'.[86] GPI is just one disorder where the face of the patient was seen to divulge their illness, for: 'The facial expression of the paralytic is peculiar.'[87] George Robertson described this expression as 'somewhat expressionless and heavy'.[88] The following lengthy quote of his reveals a number of characteristic aspects of the GPI's appearance:

> There is a stolid vacancy and a want of play of feature which, though not obtrusive symptoms, are, when attention has been called to them, very remarkable and easy of recognition. Though the patient is frequently agitated by the most stormy passions; though his delusions, whether of exaltation or depression, are peculiarly calculated to leave their impress on the face; yet it remains comparatively unmoved during moments or hours, while fury or maniacal joy, moroseness or depression, are only too evident from the actions, the gestures, or the

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[83] J. Lavater, *Essays on Physiognomy, designed to Promote the Knowledge and Love of Mankind* (London, John Stockdale, 1810).
[84] L. Jordanova, 'The Art and Science of Seeing in Medicine: Physiognomy 1780-1820', in W. Bynum and R. Porter (eds), *Medicine and the Five Senses* (Cambridge and New York, Cambridge University Press, 1993), p.124.
[85] Bucknill and Tuke, *A Manual of Psychological Medicine*, p.292.
[86] *Ibid.*, p.286.
[87] T. Austin, *A Practical Account of General Paralysis, its Mental and Physical Symptoms, Statistics, Causes, Seat and Treatment* (London, John Churchill, 1859), p.28.
[88] G. Robertson, *Clinique on General Paralysis*, 15 February 1918, LHSA GD16, p.9.

> language of the patient. The mouth, which contributed so much to the variety and colouring of expression, remains nearly fixed, and the whole muscular machinery of facial expression is quiescent, and apparently incapable of being again set in motion by the ideas. The paralytic's lower jaw may descend in the act of laughing, but the reverse of Sardinian laughter is the result; he laughs with his heart, but hardly with his face.[89]

A number of the more comprehensive psychiatric works of this period contain a small section devoted to the facial attributes of general paralytics.[90] I have found none, however, which give so much importance to physiognomy as does an article by the Edinburgh alienist Skae. He claimed that GPIs always had a peculiar expression of the countenance:

> so peculiar and so easy to recognise, when frequently seen, and so very characteristic of the disease, that any one who has had a few years' experience among the insane could pronounce upon the existence of general paralysis from the aspect of the face alone.[91]

Although mental and physical symptoms were clearly the basis of the asylum diagnostic process throughout the nineteenth century, the diagnostic potential of the face was discussed to varying degrees. Under the 'State on Admission' part of the case notes was a heading 'Appearance', which sometimes contained comments on the general look or physiognomy of the patient, as did the two admission certificates. Woodilee recorded the appearance or expression of 22 GPI patients (10%) in the admission certificates, phrases including 'vacant', 'dull' and 'foolish'. For Rosslynlee, 37 (20%) patients had their appearance or expression noted in the admission certificates, usually being described as 'wild', 'vacant', or 'dazed'. The 'physical state on admission' part of the case notes also contained numerous references to the 'wiped out' nature of the patient, apparently a typical GPI facet. For example, William P., a 48 year old married labourer admitted in August 1891, was 'dull, heavy, confused: partly "obliterated"'.[92] John M., a 32 year old married

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[89] *Ibid.*, p.29.
[90] See, especially, Austin, *A Practical Account of General Paralysis.*
[91] Skae, 'Contributions to the Natural History', p.887.
[92] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/11/84.

soldier admitted in April 1892, had a 'dull "wiped out" expression'.[93] Alexander L., a 45 year old married millworker admitted in October 1898, had a 'somewhat washed out expression'.[94]

Ten of the patients (6%) admitted to Gartnavel with neurosyphilis in the period had their appearance noted on their admission certificates as a reason for admission. James D., a 38 year old married telegraphist in the General Post Office admitted in April 1895, had physiognomy listed as a reason for his diagnosis: 'There is no doubt that he is suffering from General Paralysis. In the first place he has the look of a general paralytic.'[95] When Robert N., a 33 year old married marine engineer, was admitted in February 1908, his 'face has something of the mask like appearance.'[96] As one final example, William D., a 39 year old married mine manager admitted in March 1919, had his admission certificates copied into his case notes. The first certifying physician, Ivy Mackenzie, noted 'dulness of expression' in the certificate, while S. W. Davidson recorded a 'flattening of facial expression'.[97] And finally, at the REA, a significant 81 neurosyphilitic patients (22%) were admitted with their expression or appearance as a sign of insanity. This included the appearance of imbecility, melancholia, insanity, or facility. However, more peculiar to GPI, John M., a 60 year old single blacksmith admitted in May 1916, was 'expressionless' on admission.[98] Similarly, Alexander C., a 38 year old single clerk admitted in July 1912, had 'dull expressionless features'.[99] The case notes said of James H., a 26 year old single labourer admitted in January 1901, 'his face is acquiring the typical "washed out" appearance'.[100] Despite these phrases being recorded, we gain no sense of exactly how they influenced diagnosis. They may have merely been noticed once the patient was identified as a paralytic, or noted to record more evidence to justify this diagnostic choice.

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[93] *Ibid.*, LHB33/13/11/196.
[94] *Ibid.*, LHB33/13/15/317.
[95] *Glasgow Royal Asylum Case Book*, GGHB13/5/129/390.
[96] *Ibid.*, GGHB13/5/138/148.
[97] *Ibid.*, GGHB13/5/146/269.
[98] *Royal Edinburgh Asylum Case Book*, LHB7/51/101/193.
[99] *Ibid.*, LHB7/51/96/85.
[100] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/16/489.

Physiognomy had the potential, then, to be a useful tool for those physicians completing the asylum admission certificates, or providing the initial diagnosis on admission to the asylum. However, it was difficult to incorporate this into the asylum documentation or published literature for future reference and possible re-diagnosis. This is where clinical photography came in.[101] Although there were no technological devices to facilitate psychiatric diagnosis before the turn of the century, by the late-nineteenth century there was one tool which was being utilised within GPI diagnosis – the camera. Due to its purported capacity to copy reality, the camera was seen as being a way to record and document the physiognomy of the insane. And since general paralytics often had a characteristic physiognomy, the camera could help document or even recognise this condition in asylum patients.

American physicians were making use of photography in the 1840s to record and document disease. The most frequent subjects of early British clinical photographs, on the other hand, were people suffering from extraordinary physical illnesses or disabilities. In 1858, the *Lancet,* urging doctors to use the camera more widely, noted: 'the surgeon employs it but very seldom, and then only to delineate some cases of extraordinary deformity or unusual interest'.[102] From the 1850s onwards, British and American medical journals regularly carried items on photography, reporting such technical innovations as the use of magnesium to produce artificial light or the attempt to fix colours.[103] Early photographs followed 'classic' portrait-painting concepts and presentations. It was not until later, with technological developments such as faster exposure time and artificial lighting, that poses, lighting, and presentation varied. The freeing of the photographer from these

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[101] For the history of photography in medicine, see D. Fox and C. Lawrence, *Photographing Medicine: Images and Power in Britain and America Since 1840 (*New York and London, Greenwood, 1988)*;* J. Green-Lewis, *Framing the Victorians: Photography and the Culture of Realism* (Ithaca and London, Cornell University Press, 1996); M. Barfoot and A. Morrison-Low, 'W. C. McIntosh and A. J. MacFarlan: Early Clinical Photography in Scotland', *History of Photography*, 23 (1999), 199-210.
[102] Fox and Lawrence, *Photographing Medicine*, p.25.
[103] *Ibid.*, p.21.

early constraints occurred in the 1880s with the availability of dry plates, roll film, flash and, in 1887, with the introduction of the simple Kodak camera.[104]

Hugh Welch Diamond was the best known practitioner of psychiatric photography in nineteenth-century Britain. His photographs were used as a diagnostic tool, to document progress of treatment, and as clinical records to 'be of more value in calling to my mind the case and treatment'.[105] He found photography particularly useful in documenting unusual cases, or those which he found to be most representative of a diagnostic type. As he stated in 1856:

> Photography gives permanence to these remarkable cases, which are types of classes, and make them observable not only now but for ever, and it presents also a perfect and faithful record, free altogether from the painful caricaturing which so disfigures almost all the published portraits of the Insane as to render them nearly valueless either for purposes of art or of Science.[106]

Apart from the usual Victorian preoccupation with recording things for its own sake, Diamond provided an additional reason for compiling a file of portrait photographs. He suggested obtaining a photograph of institutional patients, particularly the criminally insane, as a record-keeping means. If a lunatic escaped, he could be traced by sending his photograph to the police. Physicians also attempted to use photographs in the medical treatment of patients. Diamond showed his photographs to inmates of the Surrey Asylum hoping that the novelty of seeing themselves as others saw them would have a beneficial effect, and claimed to achieve one or two positive results.[107] The Superintendent of the Chester County Asylum, Thomas Brushfield, also tried this technique with some success. Brushfield, however, was principally interested in using photographs more generally to improve his medical records.

Throughout this period, most people took it for granted that photographs, unlike hand-made pictures, invariable froze or copied an instant of reality. By the

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[104] S. Burns, *Early Medical Photography in America (1839-1883)* (New York, The Burns Archive, 1983), p.1256.
[105] *Ibid.*, p.272-3.
[106] Cited in A. Burrows and I. Schumacher, *Portraits of the Insane: The Case of Dr. Diamond* (London and New York, Quartet Books, 1990), p.156.
[107] *Ibid.*, p.157.

mid-nineteenth century, the medical press was an enthusiastic advocate for photography which was, as the *Lancet* put it, 'the Art of Truth'.[108] Scholars have detailed the Victorian belief in the power of photographic technology to replicate the act of unmediated seeing, to eliminate human prejudice, and to minimise the errors that allegedly vitiated the objectivity of drawings.[109] From the time of photography's invention, Victorians identified it as a 'witness', a 'detective', and a 'discoverer'. As an evidential tool at the end of the century, Emile Zola made the famous declaration: 'We cannot claim to have really seen anything before having photographed it'.[110] Thus scientific photography built on the notion of objectivity. Photography aided scientists as a method for illustrating and proving phenomena which were too 'inaccessible' or 'rapid' for ordinary human observation, as well as to record the relationship between physiognomy and disease labels. And thus it proved particularly useful for what Hogarth stressed in physiognomics - that it was not the permanent traits which allow us to read a character but, more obviously, the fleeting expression of emotions.[111]

However, what was the practical power of photography within medicine? Jelf, for example, was just one who publicly doubted the evidential value of photography.[112] Of the 'uselessness of the camera as a witness', one observer explained, the 'wider knowledge of photography due to its adoption by hundreds of thousands of amateurs as a hobby' in the 1880s and 1890s revealed photography to be 'the most elastic of all arts'.[113] Nineteenth-century debates in Britain over claims made with photographs in a variety of settings, from the laboratory to the spiritualist séance, suggest that Victorians did not, in fact, accept photographic evidence as unconditionally true and, indeed, that they interpreted facts based on photographs in a variety of different ways.[114]

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[108] Fox and Lawrence, *Photographing Medicine*, p.21.
[109] J. Tucker, '"The Voices of Nature"', p.380.
[110] Cited in *ibid.*
[111] J. Browne, 'Darwin and the Face of Madness', in W. Bynum, R. Porter, and M. Shepherd (eds), *The Anatomy of Madness: Essays in the History of Psychiatry*, volume one (London and New York, Tavistock, 1985), p.154.
[112] Tucker, '"The Voices of Nature"', p.380.
[113] *Ibid.*
[114] *Ibid.*

In 1902, the *Journal of Mental Science* recorded an interesting discussion on 'The Photographing of Insane Patients: is it Detrimental to Them?'[115] Dr. Powell said that he believed most asylums had adopted the system of photographing patients on admission, that is, as many as could be got to sit still. It occurred to him that this was done somewhat indiscriminately, and too much as a routine without considering whether it gave pain to the patients or not. In particular, he argued, the pain would be very considerable in cases of sensitive melancholia. He recollected seeing two women leaving the room in perfect misery, and it seemed to him that the process had given them pain. Delusional patients were very suspicious, and they, too, would object. Dr. Adair said that he had had a good deal of experience in photographing patients, for he had five or six hundred admissions per year and photographed all he could. If there was any case, however, which he thought was not fit or where it would not be advantageous to the patient, it was not done. In any case where a patient objected, he did not take the photograph, but he stated that such objections were very rare.

However, what did photography specifically offer the study of GPI? Such pictures, it was hoped, would illustrate a number of key features of the disease. This included the facial appearance of the patient and the physical symptoms, such as tremors and the affected gait. The naturalist Charles Darwin (1809-92) studied the physiognomy of the insane, believing their emotions were intense and uncontrolled, and thus ideal for scientific study. In April 1871, the Edinburgh-born alienist Crichton Browne (himself an amateur photographer) sent Darwin the photographs of paralytics he had requested, apologising:

> They are, I regret to say most unsuccessful and only indicate very imperfectly the labial tremor which I have described to you. The difficulty of photographing such shaky subjects is however immense and the artist a novice .... In all those whose photographs are now forwarded to you, the exalted extravagant profusive ideas have been well marked.[116]

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[115] 'The Photographing of Insane Patients', *Journal of Mental Science*, 48 (1902), pp.203-4.
[116] Browne, 'Darwin', p.159.

Such difficulties, relating specifically to this disease, would be augmented by the usual problems which could accompany photographing the insane, including their problems with concentrating and sitting still, and their delusions possibly making them excessively nervous or suspicious of the camera.

Photography seems to have had a very limited uptake within the four Scottish asylums. Of the 181 Rosslynlee neurosyphilitics in my sample, only nine (5%) had their photograph taken and inserted into their case notes. Eight of these patients were admitted over the period from May 1893 to June 1900, with the final one admitted some time later in September 1915. Of the nine, only one was female, but this is unsurprising given that only 33 (18%) in total were female. No notes accompanied these photographs, however, and no mention was made of them within the Annual Reports or Asylum minutes, so that we do not know the agenda behind the taking of the photographs. Two of the patients were admitted with mania, this diagnosis not being revised in the case notes until the post-mortem diagnosis. The remaining five were admitted with GPI. In Gartnavel, an even smaller proportion of patients were photographed. A series of about 19 photos were taken, all in 1890. This represented a broad cross-section of patients, in terms of their ages, genders and illnesses – they were not all neurosyphilitics. The date of these photographs roughly coincided with a British Medical Association conference held in Glasgow, so that they might have been taken for this specific purpose. This apart, photography had very limited use indeed in this Asylum, for in no other year does it appear to feature in the case notes. This seems to tie in with the generally 'backward' nature of Gartnavel's case notes.[117]

Of the 361 REA neurosyphilitics in my sample, only twenty had their photograph taken and inserted into their case notes. The first of these was Margaret Y, a 43 year old married housewife admitted in August 1896 with GPI.[118] She had her photograph taken outdoors, probably in the hospital grounds, in fancy dress.[119] A further three GPIs in the sample, admitted during the years 1896 to 1897, had

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[117] As chapter one discussed, relative to the REA and Woodilee, Gartnavel's case notes were slow to incorporate a proforma, or to include such factors as diagnosis.

[118] *Royal Edinburgh Asylum Case Book*, LHB7/51/86/881.

[119] It is possible, in such cases, that a photograph was handed in by relatives of the patient, rather than being taken by the asylum staff.

photographs. Then there was a gap until 1908, with only one photograph in between for Susan A., a 44 year old single woman admitted in May 1905.[120] It might be noted that all five of these patients were female. Another fifteen neurosyphilitics in my sample had photographs taken and inserted into their case notes between 1908 and 1919. These patients were of mixed gender and age. Although they all received a final diagnosis of GPI, their admission diagnosis was GPI in only fourteen of the twenty patients. The remainder were admitted with mania or manic depressive insanity. Thus, there does not seem to have been one particular reason for photographing these particular patients. After all, if they were photographed because their faces revealed their GPI status, all twenty would presumably have received the diagnosis on admission, rather than having to wait until post-mortem.

Clearly these three asylums only made very limited use of the camera. However, Woodilee was more exceptional in photographing almost half of its neurosyphilitics (104 of 210). These photographs differ from those mentioned above, in that they are not simply portrait-style photographs. Instead, the patient is often posed beside a mirror, so that the photograph gives both a front and side image of the patient. In fourteen cases, the patient's head leans against the mirror and wall. And in a further fourteen cases, the head of the patient is being held up by someone's hand, probably a physician given that in one photograph you can see the sleeve of a white coat. These 104 patients were admitted between June 1906 and June 1928, unlike the other three institutions, whose use of photography was concentrated into two decades – the 1890s and 1900s. The 104 patients were of mixed gender and age. Of these, the vast majority were admitted with GPI or juvenile GPI, except four who had to wait until post-mortem for the GPI diagnosis.

Despite the systematic use of photography for Woodilee paralytics, no mention was made of it in the Annual Reports. As well as utilising photographs, the basic case note proforma for this Institution also included a diagram of a head and ear, with notes regularly made on their shape and defining characteristics for each patient (see **Appendix 10**). Again, however, these diagrams were rarely incorporated into the admission and progress notes. As a result of this fact, it is

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[120] *Royal Edinburgh Asylum Case Book*, LHB7/51/85/605.

difficult to decipher, on a practical level, exactly how much use was made of the diagrams and photographs within the Asylum. There was a tendency in psychiatry to make the most of the available resources; to record what was seen and heard in an asylum, and to construct theories from such observations. These attitudes might go some way towards explaining the lasting influence of the science of physiognomy in psychiatry, or at least to explaining the continued noting of such information, even where it did not appear to be used.

Different types of GPI

The manic or expansive form of GPI was often called the classical type because it was the first form to be recognised. It was characterised by a maniacal attack with intense feelings of joy and delusions of grandeur. The patient might believe that he was God or royalty; or that he possessed millions of pounds, many wives and businesses or properties. This expansive type represented the usual textbook image of the general paralytic. As Skae and Clouston pointed out, such a patient would commonly be:

> diverted from the highest enterprise or the most important duty by the simplest request; he forgets the conquest of Europe, or the immediate commands of Her Majesty, for a walk round the airing-ground with an imbecile companion, to whom he talks condescendingly, promising him a dukedom or a bishopric.[121]

The exalted mood, absurd delusions of wealth and power, and cheerful frame of mind were said to make the diagnosis easy.[122] By 1880, this expansive form of GPI had firmly established itself as the stereotypical impression of the general paralytic. Within the Scottish case notes, one need not look too far to find examples of this form. Robert T., a 43 year old single engineer admitted to Gartnavel in October 1919, 'says he is God Almighty, and made me! "I made a damn'd good job of it

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[121] D. Skae and T. Clouston, 'The Morisonian Lectures on Insanity for 1873', *Journal of Mental Science*, 21 (1875), p.193.
[122] Bruetsch, 'Neurosyphilitic Conditions', p.138.

too." He gallops round the world 4 or 5 times before dinner'.[123] William G., a 36 year old married pedlar admitted in March 1926:

> states that he is going to be one of the most outstanding stage performers in the world, which is a palpable delusion in his case. He has had a proposal of marriage from a beautiful woman, who has been so attracted by him that she offers him a dowry of £20,000 - another obvious delusion.[124]

Finally, Mary S., a 44 year old married housewife admitted in May 1923, while not especially delusional:

> was very exhuberant and greeted the M.O. with great fervour, and straight away offered to embrace him. The offer was not accepted! She went off with the nurse to the ward, after bidding her husband an excessively affectionate adieu.[125]

General paralytics were made all the more pathetic by these grandiose notions in the face of their mental and bodily degeneration.

The depressed form of GPI chiefly featured persistent depression, or at least mood fluctuations, with ideas and delusions of sin and persecution, impoverishment or hypochondriacal tendencies. A number of the Scottish general paralytics had solely delusions of persecution. John Y., a 60 year old widowed P.O. official admitted in February 1918, had auditory hallucinations, 'hearing by wireless that he is to be cut up'; while Alexander M., a 35 year old single colliery salesman admitted in March 1926, 'has delusions of pheasants being in his throat. He wants to go to a general hospital for treatment'.[126] James Y., a 23 year old single soldier admitted in September 1918, was profoundly depressed, 'weeping and moaning, and keeping clear of people in case he infects them'; while Robert T., a 36 year old married soldier admitted in May 1918, 'says that his brain has been removed and [speaks] about babies being killed'.[127] When William T., a 36 year old married clerk admitted

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[123] *Glasgow Royal Asylum Case Book*, GGHB13/5/146/543.
[124] *Ibid.*, GGHB13/5/183/366.
[125] *Ibid.*, GGHB13/5/183/354.
[126] *Ibid.*, GGHB13/5/145/169 and GGHB13/5/145/848.
[127] *Ibid.*, GGHB13/5/190/551 and GGHB13/5/145/419.

in July 1918, 'heard his children crying, he thought they were dying of starvation'.[128] John E., a 37 year old single soldier admitted in July 1918, 'will not allow himself to be shaved, etc., for fear the attendants might cut his throat or drown him in his bath'.[129]

A number of Scottish paralytics had a combination of expansive and depressive delusions. At Gartnavel, Alexander A., a 51 year old married insurance agent admitted in January 1903, had both grandiose and persecutory delusions, believing himself to be a Lord of Balmoral and Dunblane, but also believing that the Gartnavel physicians wished to poison him with acid.[130] James C., a 45 year old single wine and spirit merchant admitted in September 1930, had an exaggerated idea of his own importance and abilities, stating 'that he has the best voice in the world, and is the world's best bridge player'.[131] After malarial injections, the delusions worsened, so that he began to 'talk by wireless telephone with God, the Pope and the Chief of Dumfries Police'. Furthermore, he sat with his head hanging 'to allow the snakes and corpses in his brain to slip out through his eyes'.

While Brower and Bannister, together with the majority of British clinicians, believed the expansive form consistently to be the typical type, Paton, Clarke and Atwood felt that the depressive form was overtaking the grandiose form as the most popular type of GPI by the turn of the century. They asked: 'Have the forms of GPI altered?'[132] By 1908, they pointed out, only one-tenth to one-fifth of cases were grandiose, with the depressed type forming the majority of cases; while the German alienist Kraepelin considered the depressed form to exist in more than one-fourth of cases.[133] Elsewhere, continental and Russian alienists complained that few modern writers were making a genuine attempt to differentiate types of GPI. However, they made an interesting point. They believed that a considerable number of depressed and simple dementing types were being classed as melancholics and dements.[134]

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[128] *Ibid.*, GGHB13/5/145/479.
[129] *Ibid.*, GGHB13/5/145/505.
[130] *Ibid.*, GGHB13/5/134/411.
[131] *Ibid.*, GGHB13/5/192/949.
[132] L. Clarke and C. Atwood, 'Have the Forms of General Paresis Altered?, *Journal of Mental Science*, 54 (1908), p.761.
[133] *Ibid.*
[134] *Ibid.*

This might explain why the expansive form of GPI had predominated for decades. In fact, many more depressed paralytics might have been erroneously diagnosed with another disorder, as they did not conform to the 'classical' form of GPI. Similarly, in Britain, Clarke and Atwood remarked that a number of British writers had failed to diagnose GPI in the absence of euphoria, a view they believe to be largely due to Mickle's teaching two decades earlier.[135] Clouston himself saw the delusions of grandeur as the most striking symptom of GPI, which might explain why they had constituted such an important part of the diagnostic criteria in the REA. However, he recorded that Skae had only found such a symptom in half of his 108 Edinburgh cases. Reviewing 85 patients from a rural district outside Edinburgh, Clouston found that of the 68 men only 30, and 2 women out of 17, had exaggerated notions.[136]

Thus, despite sharing a GPI diagnosis, it was perceived that some patients became depressed and others expansive and grandiose with approximately the same underlying organic brain damage. In fact, by the 1930s, a whole range of subtypes had begun to emerge, which were never fully defined, and muddied the identity of the disease. The five main subdivisions by this date were 'simple', 'demented', 'manic', 'melancholic' and 'agitated'.[137] The REA admission register 'diagnosis' column best reflects this sub-division of GPI types in Scotland, with an even more complicated series of forms. Between 1909 and 1916, there were admissions of 'delusional dementia of GPI', 'general paralysis of the apathetic type', 'melancholic dementia of general paralysis', 'excited dementia of general paralysis', and 'dementia of organic brain disease (GPI)'. This might further represent a method of subdividing the great number of paralytics diagnosed within this Institution, as the sub-section on classification discussed above.

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[135] *Ibid.*

[136] Skae and Clouston, 'The Morisonian Lectures', p.197.

[137] The last of these was a somewhat rare form, generally accompanied by confusion, failure to recognise familiar people or places, motor excitement without mania, hallucinations of hearing and vision, convulsive movements, and gnashing of teeth.

Differential Diagnosis

Due to the profusion of symptoms associated with GPI, and the early stage being often without physical symptoms, GPI could imitate a number of other disorders, making diagnosis difficult. Thus the method of differential diagnosis was often utilised to differentiate GPI from a number of other affections. The list of disorders which GPI was most likely to resemble - the 'common differentials' - consisted of alcoholic insanity, mania, melancholia, syphilitic insanity, cerebral syphilis, tabes dorsalis, epilepsy, and senile dementia. Each will be considered below.

Alcoholic Insanity

Clouston stated that, of all the list of common differentials, 'alcoholism only gives the physician really great uncertainty in coming to a diagnosis [of GPI]'.[138] He noted that Ball and Regis found that while GPI differed essentially in its vital relations from all other varieties of insanity, it exhibited a very close parallelism with chronic alcoholic insanity. As chapter seven will discuss, alcoholic intoxication was seen as a common exciting cause of GPI, one possible reason why chronic and subacute alcoholism were often confused with GPI. Bonville Fox claimed that there was no point by which the exaltation of alcoholism could be distinguished with absolute certainty from that of GPI. Each separate physical symptom of GPI might exist in chronic alcoholism - in both there was constant mental restlessness and confusion, marked tremors of the face and hands, and large and extravagant notions, though without much accompanying exaltation of feeling in alcoholism.

Those points which differentiated the two disorders were that, in chronic alcoholism, there was typically a complete recovery of the patient, whereas the GPI prognosis was very poor. Alcoholism saw only an incomplete affection of speech compared with GPI. Reginald Farrar, Assistant surgeon at Stamford and Rutland General Infirmary, held that:

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[138] T. Clouston, *Unsoundness of Mind* (London, Methuen, 1911), p.246.

> whatever difference exists, clinically, between typical general paralysis and chronic alcoholism culminating in paralytic dementia, is due to the fact that, as Dr. Clouston puts it, by a course of chronic soaking "the finer points of moral character and feeling are rubbed off." Whereas in the typical general paralytic, who is often at the commencement of his attack a vigorous and capable man of the world, rather above than below the average in intellectual capacity, the exaltation, grandiose delusions, and restless energy are but the insane exaggerations of his normal mental activities, thrown off the balance by some sudden disturbing agency, the tippler has been blunting and dulling his faculties by years of indulgence, till he has no intellect left to become deranged, and passes more gradually and insensibly into a condition of dementia. But the final result in both cases is the same, brain congestion, thickening of membranes, and erosion of the cortex giving rise to dementia, which ends in stupor, coma, and death.[139]

Two Scottish cases illustrate the confusion between these two conditions. Robert C., a 43 year old married house factor admitted to Gartnavel in October 1885, although diagnosed with GPI, displayed symptoms which 'may be due to the alcoholism and not GP'.[140] William U., a 45 year old married clothier admitted in September 1885, had no admission certificates in his case notes, but on admission was described as being:

> extremely stupid, unable to utter a syllable or seemingly to understand a request to do so simple an act as put out his tongue. He was irritable and inclined to use both his arms and feet in attacking those about him .... his whole manner and aspect [suggest] very strongly General Paresis far advanced or else a marked case of alcoholism.[141]

One Woodilee paralytic was also initially diagnosed with alcoholic insanity.

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[139] R. Farrar, 'On the Clinical and Pathological Relations of General Paralysis of the Insane', *Journal of Mental Science*, 41 (1895), p.470.
[140] *Glasgow Royal Asylum Case Book*, GGHB13/5/124/197.
[141] *Ibid.*, GGHB13/5/124/171.

Mania

Early in GPI, acute maniacal excitement and delusions of grandeur were common mental symptoms which caused GPI to be quite easily confused with mania. In both disorders, there could be a mixture of exalted delusions with those of persecution, and some pupillary changes. Tremor and twitch of face and tongue, and affection of speech, could also be found in the monomaniac. Mania or monomania of grandeur, wealth, or pride, often occurred quite independently of GPI, but in doubtful cases of this sort, the French physician Esquirol diagnosed GPI by an occasional slowness in pronunciation, and by the fact of the patient being calmed by a promise, and induced to forego apparently cherished projects.[142] The somatic signs, when well pronounced, also marked the case to be one of GPI. For example, the maniacal excitement which attended GPI was distinguished by the muscular tremors of the tongue and lips, and by the catch of the voice. Furthermore, the type of excitement in each disorder differed:

> The excited state of general paralysis, which may be mistaken for acute mania, rarely lasts more than from ten to thirty days. After that time the excitement subsides, while the delusions and the muscular symptoms remain, and the nature of the disease becomes apparent.[143]

In the four Scottish asylums, the differential diagnosis of manic GPI from mania or the manic attack of manic depressive insanity rested primarily on the demonstration of the physical symptoms. Jane C., a 50 year old single lady's maid admitted to the REA in February 1893, was admitted as a case of acute mania until about a third of the way into her progress notes, when her handwriting changed and she was then described as 'a marked case of GP'.[144] Other characteristic symptoms subsequently developed, including unequal and irregular pupils and slurred speech. 51 REA patients (14%) were initially diagnosed with mania, while Gartnavel saw only four. Three Woodilee patients were initially diagnosed with mania, due to their admission symptoms being incoherence in talk, violent, restless, excited and

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[142] W. Mickle, *General Paralysis of the Insane*, second edition (London, H. K. Lewis, 1886), p.228.
[143] Bucknill and Tuke, *A Manual of Psychological Medicine*, p.304.
[144] *Royal Edinburgh Asylum Case Book*, LHB7/51/58/593.

delusional. For those GPI patients in the sample who were initially diagnosed with mania, it was generally because their physical symptoms had not developed yet.

Melancholia

Barker, a Medical Superintendent in Victoria, asserted: 'Melancholia is not commonly associated with general paralysis, although the emotional susceptibility and the easily excited tears would, perhaps, lead one to suppose the contrary.'[145] However in the GPI sub-sample, a significant number of patients (41) were initially diagnosed with melancholia.[146] And George Robertson claimed to have regarded one patient as a case of melancholia for more than a year until he had an epileptic seizure, at which point Robertson decided the patient was a general paralytic.[147] Given some of the symptoms of GPI, it is hardly surprising that melancholia could be mistaken for GPI. At the REA, Elizabeth N., a 49 year old married housewife admitted in November 1894, was diagnosed with melancholia/GPI on admission. Her progress notes recorded: 'Diagnosis of this case very doubtful on admission, thought to be melancholia (idiopathic)' due to her symptoms of being: 'Excited, incoherent, restless, talkative, talking rubbish, [and] delusional'.[148] In order to differentiate GPI from melancholia, Mickle advised:

> Some of the somatic signs of GPI, the facts that the patients rarely maintain complete silence, that they show less of that rigid, fixed, contraction of the lineaments, and deep furrowing of the lines of expression, that is usually seen in the simple form of melancholia with stupor, are distinctive points.[149]

Added to this, Maurice Craig, a physician and lecturer in psychological medicine at Guy's Hospital in London, pointed out that:

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[145] W. Barker, *Mental Diseases: A Manual for Students* (London, Cassell and Company, 1902), p.99.
[146] 20 from Rosslynlee, and 21 from the REA.
[147] G. Robertson, *Clinique on GPI*, 15 February 1918, LHSA GD16, p.9.
[148] *Royal Edinburgh Asylum Case Book*, LHB7/51/62/349.
[149] Mickle, *General Paralysis of the Insane*, p.238.

> The excitement of ordinary mania is not so unreasoning as that of general paralysis. The mental deterioration is greater in the latter disease. In mania and melancholia the memory is never really bad, as it may be in GPI. Speech defects, and failure of muscular power, altered handwriting, pupillary changes, and seizures all point to general paralysis.[150]

As with mania, the confusion between melancholia and GPI tended to occur at an early stage before the physical symptoms had yet developed.

Syphilitic Insanity

There were several other forms of insanity seen to be related, or similar, to GPI which could initially imitate the disorder enough to confuse diagnosis. Syphilitic insanity, the result of syphilitic disease of the brain, could be very difficult to distinguish from GPI. An Argyll-Robertson pupil was of no diagnostic value, for it occurred in both diseases. However, tremors were seldom present in syphilitic insanity. Speech-defects also favoured GPI, as aphasic states were the only form of speech-disorders met with in syphilitic insanity. Furthermore, in syphilis, there was an absence of, or less marked, motor signs, like the affection of lips, face and tongue. Finally, whereas GPI could have either euphoria or depression and suspicion as an accompanying mental state, the mental state of the syphilitic patient was usually one of depression with a tendency to become gradually weak-minded. As well as the 43 REA patients in the sample who were diagnosed with syphilitic insanity under 'Skae's classification', one other was diagnosed with *syphilitic brain disease*.

Cerebral Syphilis

The mental symptoms in fully-developed cerebral syphilis or brain syphilis consisted of delirium and a memory defect for recent events. The emotional condition was

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[150] M. Craig, *Psychological Medicine: A Manual on Mental Diseases for Practitioners and Students* (London, J. and A. Churchill, 1917), p.241.

variable, at one time the patient being excited, irritable and resistive, at another depressed and anxious. The patient would be imperfectly oriented for time and place. It was also not unusual for cases of cerebral syphilis to express grandiose ideas and to be euphoric.[151] As Henderson observed:

> The more one sees of cases of brain syphilis, the more does one become impressed by the relative frequency of the occurrence of a fairly well-marked degree of euphoria in these cases. It seems to me that this fact has been somewhat imperfectly realised, and that we have been too ready to diagnose cases showing euphoria and grandiose ideas, associated with certain physical signs, as cases of GPI.[152]

In cases of cerebral syphilis of long standing, the memory tended to become diffusely affected, the defect then being similar to that occurring in cases of GPI. The above symptoms reveal why cerebral syphilis was so difficult to differentiate clinically from GPI. In fact, Dunlap stated that cerebral syphilis and GPI could come so closely together that no one could be positive about which was actually present.[153]

In considering the differential points between these two diseases, the pupillary signs were deemed to be extremely important. The presence or absence of Argyll Robertson pupils was probably the most valuable symptom in trying to differentiate between GPI and cerebral syphilis, according to Henderson, since their occurrence in cases of cerebral or spinal syphilis was a comparative rarity.[154] In GPI and locomotor ataxia, on the other hand, upwards of 70 per cent of the cases showed Argyll Robertson pupils. Other physical symptoms included the distorted speech of GPI, which rarely occurred in cerebral syphilis; and the writing defects, for in cerebral syphilis there was generally less tremor and no distortion. Only one patient in the sample was initially diagnosed with cerebral syphilis.

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[151] D. Henderson and R. Gillespie, *A Textbook of Psychiatry for Students and Practitioners* (London, Oxford University Press, 1927), p.316.
[152] Henderson, 'The Diagnosis of Cerebral Syphilis', p.247.
[153] Cited in Henderson and Gillespie, *A Textbook of Psychiatry*, p.315.
[154] Henderson, 'The Diagnosis of Cerebral Syphilis', p.245.

Tabes Dorsalis

The classic symptoms of tabes dorsalis included incoordination of the legs, causing a characteristic swaying and tottering gait (which physicians accentuated by asking the patient to close his eyes); excruciating 'lightning' pains throughout the body; sexual and urinary dysfunction; and multiple forms of joint disease elucidated by Charcot during the 1870s.[155] In 1871, Westphal also suggested that the loss of the patellar tendon reflex was practically diagnostic of the disease. In order to differentiate between GPI and tabes, the test of closing the patient's eyes and watching its effect on equilibration and locomotion was employed. A further differentiating factor was the presence of an affection of speech, which, like the twitching of the lips and face, was scarcely simulated in tabes. Finally, memory retention and orientation remained intact in tabes, while speech and writing did not present the specific disturbances seen in GPI.

Epilepsy

Although far less likely to be confused with GPI, epilepsy did share several characteristic symptoms. Besides the convulsive seizures found in epilepsy, there could be a shaky, thick speech and a jerky tremulousness of the lips and face, although, according to Mickle, 'as far as I have seen this only occurs to any marked degree in some chronic patients, subject to frequent, severe and general convulsions'.[156] However, upon closer examination, there were a number of differences. In epilepsy, the convulsive attacks often differed from those more usual in GPI, the physiognomy differed, and the 'irritable, suspicious, surly, impulsively violent state of the epileptic' contrasted with 'that more usual to the general paralytic'.[157] Furthermore, it was seen as very rare for true epilepsy to begin after the age of thirty years, while General Paralytics were typically aged between 30 and

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[155] See M. Romberg's classic account, *A Manual of Nervous Diseases of Man*, two volumes (London, Sydenham Society, 1853), volume two, pp.395–401.
[156] Mickle, *General Paralysis of the Insane*, p.237.
[157] *Ibid.*

50. One REA patient in the sample received an initial diagnosis of epileptic insanity, altered to GPI at post-mortem.

Senile Dementia

When GPI appeared late in life, it was necessary to differentiate it from senile dementia. Most obviously, the dementia from which GPI received its pseudonym *dementia paralytica* linked the two disorders. Such dementia-related symptoms as memory loss, disorientation, a change in character, and incontinence, were also found in most general paralytics at some stage of their disease. The London-based lecturer Blandford admitted the similarities between the two conditions – 'senile dementia ... may be characterized by loss of memory, extravagant and indecent conduct, and delusions', all common symptoms of paralytics – but also listed the main differentials:

> There will, however, be an absence of the specific delusions and the maniacal condition; neither shall we find the inequality of pupils, the stutter, nor stumbling gait. In fact the failing mind in senile dementia is manifested usually long before any symptoms of bodily paralysis.[158]

And as the English physician and lecturer Craig explained:

> the diagnosis of dementia paralytic is often overlooked in the early stages of the disease, because physicians do not examine the patient carefully enough for physical signs and too frequently make their diagnosis from the mental symptoms alone.[159]

Margaret I., an 88 year old single servant, was admitted to Rosslynlee in March 1910 with 'all the symptoms of a case of senile insanity being restless, irritable, confused and needing to be under constant supervision'.[160] Yet her diagnosis was noted as GPI. A handful of Woodilee cases had to wait until post-

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[158] *Ibid.*, p.234.
[159] Craig, *Psychological Medicine*, p.243.
[160] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/24/28.

mortem for their GPI diagnosis. Eight of these patients received an initial diagnosis of dementia. Their symptoms on admission were organic brain disease, not answering when questioned or taking any notice of their surroundings generally, being restless, confused, noisy, excited, incoherent and delusional. Of those patients who did not receive an initial diagnosis of GPI, but whose diagnosis was altered to it at post-mortem, no physical symptoms were found. Two Gartnavel paralytics were also diagnosed with dementia on admission.

A Stable Diagnostic Category?

The majority of the contemporary literature, and most of the Scottish asylum case notes, reveal that GPI cases had a fairly distinct set of symptoms. For the admission certificates, this was mainly mental symptoms, although as the disorder progressed, a number of well-delineated physical symptoms also made their appearance. Thus, Clouston's confident assertion that GPI 'always has distinctive and marked bodily as well as mental symptoms and its course, termination and pathology can be predicted'.[161] However, a number of articles and textbooks took an opposing viewpoint, claiming that it was very difficult to diagnose GPI accurately. The onset of the disease could be insidious, so that there could be great difficulty in diagnosing the disease in its earlier stages. Furthermore, at the onset of the disease, the 'chief somatic signs' could 'for a time be absent, or ambigious, or slight'.[162] And, of course, the mental symptoms were those most likely to be confused with other disorders, such as mania and dementia. Thus Mickle advised that:

> in all such examples of insanity, occurring as a first mental attack, in males between 30 and 50 years of age, the medical attendant will act wisely if he keeps in mind the possibility of general paralysis, and systematically watches for any unequivocal indications thereof.[163]

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[161] Clouston, *Unsoundness of Mind*, p.242.
[162] Mickle, *General Paralysis of the Insane*, p.217.
[163] *Ibid.*

In some cases, the diagnosis of GPI proved so problematic that until death, and a post-mortem to find the distinct pathological changes in the brain, the GPI diagnosis would not be given. Even where a patient seemed to have all the characteristic symptoms of GPI in life, some physicians were too cautious to label him a general paralytic, including Clouston:

> It may be said that as he has not died it is impossible to say that this is a case of true general paralysis. If he is not, he has had every symptom of the disease except its termination in death, and neither Dr. Skae nor I, nor one of the score of assistant physicians here who have had charge of him, have had any doubt on the subject.[164]

There were also those patients who were considered to be classic cases of GPI, only to recover in some degree, hence throwing their diagnosis into doubt. In 1903, Gartnavel Physician Superintendent Landel Oswald pointed out that:

> Among those discharged as improved were two cases of General Paralysis of the Insane. They were typical cases, and in both the classical symptoms of the disease were present. They both improved marvellously under treatment, and at the time of their discharge were so fit mentally that they might have been called recovered. Since their discharge, nearly a year ago, both have remained well, and while one has now the control of his own affairs the other enjoys an active country life. True General Paralysis is believed never to be recovered from, and I merely record the fact of apparent recovery in two cases.[165]

Despite such Scottish patients exhibiting the core mental and physical symptoms which characterised GPI, only death could clinch the diagnosis. This could possibly explain why the Scottish asylum records contain such a significant number of patients given the GPI diagnosis only in the 'cause of death' part of their case notes.

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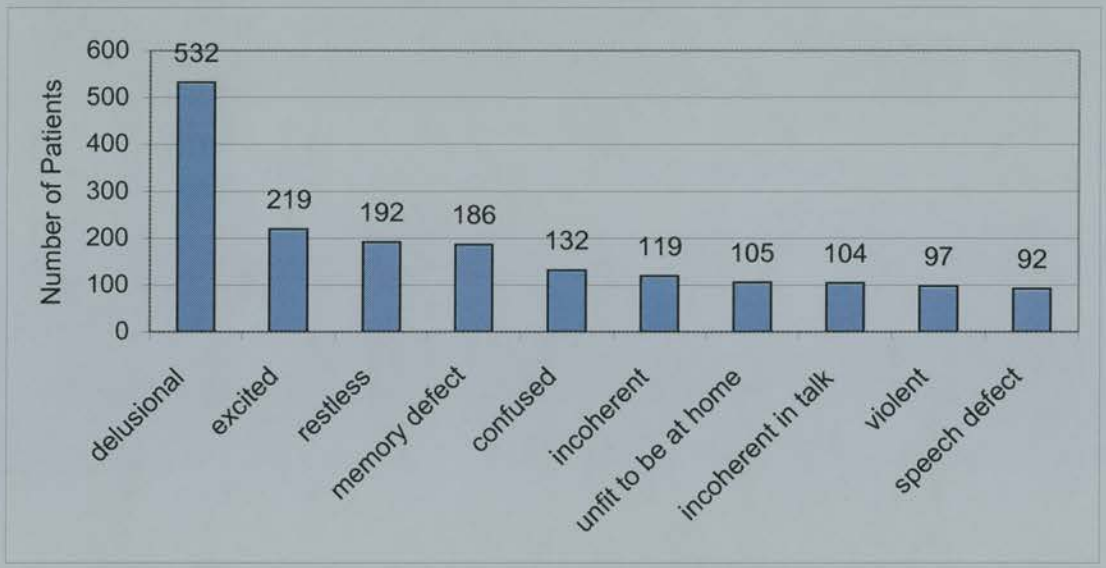
[164] T. Clouston, *Mental Diseases* (London, J. and A. Churchill, 1883), p.371.
[165] *90th Gartnavel Annual Report*, 1903, GGHB13B/2/223, p.18.

Despite the problematics of diagnosis, one could argue that GPI maintained a relative conceptual stability, based upon the finding that a core cluster of physical and mental symptoms remained central to GPI throughout its history. Throughout the period from 1880 to 1910, there was a strong textbook consensus as to the core features of the disease – dementia, delusions, speech and writing defects, tremors, progressive paralysis, and fatality. **Figure 4.1** shows the most popular symptoms listed in the Scottish admission certificates of those admitted with GPI.

Figure 4.1 The Main Symptoms of GPI on Admission to the Four Scottish Asylums, 1880-1930[166]



Sources: *General Asylum Register* for each of the four asylums, GGHB13/6/78-80 and GGHB30/10/1-4; LHB7/35/5-13 and LHB33/6/1-2.

The main pattern to be noted is the 'mental' nature of all but one of these symptoms. Obviously, speech defects are a physical symptom, but the rest constitute mental and behavioural symptoms. In each of the four asylums, mental symptoms

[166] Hereinafter, all figures and tables relating to neurosyphilitics refer to the sample of cases outlined in **Appendix 7**.

were noted far more in the admission certificates than were physical symptoms. For most of these patients, the characteristic physical symptoms would only develop during their stay in the asylums. On admission, delusions were easily the most popular symptom (532 patients, or 58%), with the next most popular symptom accounting for less than half that number of patients (excitement in 219 patients, or 24%). The pattern outlined in the graph is broadly representative of each of the four asylums. It might be noted that eleventh on this list was 'signs of GPI', mentioned for 86 patients. Bearing in mind that it was often general practitioners who filled in these admission certificates, it is interesting that the GPI diagnosis was felt to be so definite that such a significant number of certificates contained reference to this particular disease, rather than the symptoms merely being listed and the alienists being allowed to reach their own diagnosis.

Despite this common cluster of symptoms, a review of the Scottish case notes reveals that erroneous diagnoses were initially made relatively commonly. Of the REA GPI patients in my sample, twelve (3%) had their GPI diagnosis only noted at post-mortem. They were admitted initially with either mania or melancholia. In each case, their admission symptoms were mental-based symptoms – most commonly delusions, restlessness, incoherence, and excitement – with no mention of any physical symptoms. More significantly, at Rosslynlee, a surprisingly large 72 of the 181 (40%) patients in the sample only received a GPI diagnosis close to or at post-mortem. 47 of these were admitted with 'mania'. Again, this seems due to a lack of physical symptoms on admission. The fact that, for the four asylum samples, only 577 cases (67%) were diagnosed as GPI on admission, as many as 150 (17%) at a later stage during their stay in the asylums, and a further 140 (16%) only on death, reveals the scale of these initially erroneous diagnoses.

One patient who had his diagnosis changed to GPI was Robert C., a 36 year old married engineer admitted to Gartnavel in September 1908. His initial diagnosis before admission to Gartnavel was 'sunstroke', due to his symptoms of attacks of shivering, crawling on the floor, stripping, and throwing his head about with what he called 'the Shakes'.[167] Of the Gartnavel patients, only five had to wait until post-

[167] *Glasgow Royal Asylum Case Book*, GGHB13/5/138/448.

mortem for their GPI diagnosis, with the vast majority receiving their GPI diagnosis on reaching the asylum.[168] What all five had in common is that their admission certificates contained no physical symptoms whatsoever. The symptoms common to each were incoherence, delusions, and restlessness. In fact, each of the asylums had the same pattern in that the GPI patients had far more mental symptoms recorded on admission than physical. And it was these physical symptoms - such as tremors, speech and gait defects - which most clearly differentiated GPI from other mentally similar disorders such as dementia, mania and melancholia. Rosslynlee is a typical example of the four asylums here. The most popular symptoms listed in the neurosyphilitic admission certificates were consistently mental throughout the period from 1880 to 1930, including delusions (in 101 of the 181 patients), incoherent talk (45), memory defect (43), excitement (41), violence (37), and restlessness (36). Physical symptoms like speech (22) and gait defects (9), incontinence (9), tremors (6) and paralysis (6), were noted in far fewer cases.

On the other hand, a few cases show that mental symptoms were not always necessary to make the GPI diagnosis. Although described as insane, restless, excitable and delusional on admission, the progress notes of William N., a 34 year old married painter admitted to Woodilee in October 1901, said that: 'So far as can be seen there does not seem to be anything wrong mentally with this man. He is very quiet and is quite rational in manner and conversation.'[169] Yet he retained his GPI diagnosis. Similarly, John C., a 31 year old single soldier admitted in September 1900, was described as:

> a peculiar case. He seems not to realise his position. At times he answers questions quite rationally and his memory seems good, at other times he seems to lose the thread of what he has been talking about.[170]

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[168] However, it should be noted that, although the 'diagnosis' part of the case notes was located in the 'On Admission' part of the proforma, it is quite possible that the actual diagnosis could have been filled in later. In fact, for the REA, this section is often in a different hand – Clouston's – than the rest of the admission information.

[169] *Barony Parochial Asylum Case Book*, GGHB30/4/8/4.

[170] *Ibid.*, GGHB30/4/6/107.

However, these cases also displayed a distinct lack of physical symptoms. Furthermore, such cases were in the minority, for almost all general paralytics had mental symptoms on admission but lacked the characteristic physical symptoms.

As chapter two discussed, GPI was commonly perceived as progressing through three stages. Evidence suggests that this 'stadial' nature of the disease was crucial to the erroneous diagnoses of the disease, since these errors tended only to occur in the early stage of the disease.[171] In contrast to the later stages, where cases conformed far more to the textbook cases, displaying both physical and mental symptoms, general paralytics in the early stage of the disease often lacked the characteristic physical symptoms. An initially erroneous diagnosis was usually made on the basis of mental symptoms before the physical symptoms had developed. As George Robertson cautioned:

> no one is justified in diagnosing a case of general paralysis from the mental symptoms alone. It is practically impossible to do so; you may suspect it, but you cannot diagnose it with any certainty. Any one who attempts to do so will, sooner or later, come a cropper.

Instead, both mental symptoms and physical signs had to be present, for: 'It is the combination of the two … that enables you to come to the conclusion that the case is one of general paralysis'.[172] And yet this advice to medical students does not seem to have been heeded by many of the admitting physicians in the four asylums. Thus Robertson advised that:

> prevalence [of GPI] is more accurately judged by the death-rate than by the admission-rate, for while practically all the cases of the disease die, a certain number of cases are undiagnosed on admission and are only recognised at a later stage as the symptoms develop.[173]

In terms of differential diagnosis, however, it was not just that mania and melancholia had to be differentiated from dementia and GPI. Some eminent

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[171] This might explain those journal articles specifically focused on diagnosing the early stages of GPI – see, for instance, G. Fleming, 'The Early Diagnosis of General Paralysis', *The Practitioner*, 112 (1924), 287-95; P. Knapp, 'The Early Symptoms of General Paralysis', *Journal of Nervous and Mental Disease*, 38:9 (1911), 513-21.

[172] G. Robertson, *Clinique on GPI*, 25 February 1920, LHSA GD16, p.2.

[173] *96th Royal Edinburgh Asylum Annual Report*, 1908, LHB7/7/12, p.19.

physicians believed that these disorders, by their nature, evolved into dementia, and thus a diagnosis of 'mania' which was later scored out and replaced with 'GPI' would be perfectly accurate. In their authoritative textbook, Bucknill and Tuke referred to 'the constant tendency of mania, and other forms of mental derangement, to pass into dementia'.[174] This observation sums up the nineteenth-century concept of mania as a condition commonly leading to mental deterioration. Clouston, discussing the prognosis of mania, said there was complete recovery in about half the cases; death in 5 per cent; partial recovery in 15 per cent; and in the remaining 30 per cent, dementia – adding that 'the bulk of chronic patients in asylums are of this class'.[175] It was widely believed that GPI could often be preceded by an attack of acute mania presenting the usual features but leaving the patient, when the maniacal symptoms passed off, more or less demented, with the impaired speech and unsteady gait of the general paralytic.

There is a further point which is relevant to mania and melancholia, but only in the REA. Fourteen patients in the REA sub-sample initially had 'mania' written as their case note diagnosis. However, this was then scored out and replaced with 'GPI'. Unfortunately we have no idea at what point this re-diagnosis was made. And yet, whereas the case notes were filled in by clerks and assistant physicians, while Clouston was Physician Superintendent of this Institution, he reserved the exclusive right to complete the 'diagnosis' section. Four cases of 'melancholia' were also scored out and replaced with 'GPI'. Interestingly, this scoring out and altering to GPI is not seen for any other diagnosis except mania and melancholia, and it happened throughout the period, even after Clouston's departure. Perhaps this is simply accounted for by the fact that each REA Physician Superintendent believed it natural for mania and melancholia to pass into dementia.

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[174] Bucknill and Tuke, *A Manual of Psychological Medicine*, p.304.
[175] T. Clouston, *Clinical Lectures* (London, J. and A. Churchill, 1898), p.205.

Conclusion

The process of differential diagnosis was an integral part of clinically diagnosing GPI, due to the fact that a number of other disorders resembled GPI enough to have to be considered and differentiated from it. Even then, a significant number of the sample of general paralytics, particularly those admitted to Rosslynlee, were initially diagnosed with another mental condition, most commonly mania or melancholia. These facts are suggestive that GPI was not the stable and easily identified disease category that it has been portrayed to be. As is true with any classificatory scheme, GPI was a number of symptoms clustered together into a coherent entity, and since in this particular case there was such a polymorphous symptomatology, almost any insanity could resemble GPI during at least part of the patient's asylum stay, particularly the early stage. However, for the vast majority of the patient sample, a specific and tangible cluster of symptoms constituted the diagnosis of GPI, at whatever stage it came. The reason for earlier erroneous diagnoses seems to have been because of the nature of GPI itself, with its progression through several stages and the fact that the physical symptoms often took longer to develop than the mental. The 'stadial' nature of GPI, well documented in the contemporary literature, was therefore crucial to the identity and diagnosis of the disease. And the fact that mania and melancholia were conceived by some as naturally passing into dementia only strengthens this assertion. These factors explain why GPI appears to have been, in practical terms, an inherently unstable and difficult category before the implementation of laboratory methods.[176]

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[176] This accords with Berrios' belief that GPI was never a conceptually stable disease. He suggests that the definition of the disorder was broad and open to vast disagreement during the nineteenth century. Many cases diagnosed as such, he notes, subsequently recovered, leading him to the suspicion that they were confused with disorders such as *depressive pseudo-dementia.* See G. Berrios, '"Depressive Pseudodementia" or "Melancholic Dementia": A Nineteenth Century View', *Journal of Neurology, Neurosurgery, and Psychiatry*, 48:5 (1985), 393-400.

Chapter Five: The Impact of the Laboratory

The last decade has seen a great deal of interest in the interface between clinical medicine and laboratory science in the twentieth century.[1] A number of sociological studies have also analysed the practices and interests of bench workers and the knowledge claims they make.[2] Much of this work has been informed by the sociology of knowledge, and has challenged positivist claims that the laboratory allows nature to 'speak for herself' in an objective fashion.[3] The Wassermann test provides an excellent means of studying the laboratory-clinic relationship at both published and case note level. The test elicited a wide range of reactions, sometimes polarising groups of alienists between those who claimed complete faith in its powers and those who attacked it virulently; and the remainder who expressed the need to cautiously balance the findings of both. Debates often centred upon the practice of laboratory workers who developed and carried out the test, and the epistemological significance of their efforts. The production and negotiation of knowledge were clearly appreciated and fiercely debated by early twentieth-century doctors.

Within the context of a survey of European developments in laboratory technology, this chapter will assess the relationship between the laboratory and clinical psychiatry in Scotland, with special reference to the two Scottish Asylum Laboratories. These were established in 1897 and 1909 in Edinburgh and Glasgow

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[1] The literature on this subject is growing steadily. For some fascinating interpretations of the place of the laboratory in British medicine, and insights into the tension and rivalry between clinicians and laboratory researchers, see A. Cunningham and P. Williams (eds), *The Laboratory Revolution in Medicine* (Cambridge, Cambridge University Press, 1992); L. Jacyna, 'The Laboratory and the Clinic: The Impact of Pathology on Surgical Diagnosis in the Glasgow Western Infirmary, 1875-1910', *Bulletin of the History of Medicine,* 62:3 (1988), 384-406; C. Lawrence, 'A Tale of Two Sciences: Bedside and Bench in Twentieth-Century Britain', *Medical History*, 43 (1999), 421-49; J. Pickstone (ed.), *Medical Innovations in Historical Perspective* (London, Macmillan, 1992); and S. Sturdy and R. Cooter, 'Science, Scientific Management, and the Transformation of Medicine in Britain, c.1870-1950', *History of Science*, 36 (1998), 421-66.

[2] See, for example, H. Collins and T. Pinch, *The Golem: What Everyone Should Know about Science* (Cambridge, Cambridge University Press, 1993); A. Pickering (ed.), *Science as Practice and Culture* (Chicago and London, University of Chicago Press, 1992).

[3] See, for example, Cunningham and Williams, *The Laboratory Revolution in Medicine*; and Pickstone, *Medical Innovations in Historical Perspective*.

respectively. A brief history of each will first be given. Then, the work of these laboratories, and their role in the diagnosis and treatment of GPI will be discussed and, in particular, their application of the Wassermann test to the diagnosis and treatment of GPI.[4]

Most historical accounts of GPI offer only a traditional interpretation of how the laboratory made its impact, assuming that its tools led to unequivocal advances in understanding and managing the disease.[5] Certainly, within psychiatry, good rhetorical use was made of the laboratory model. However, it is important to balance alienists' words with an assessment of what was happening in daily practice. This chapter will, therefore, assess the impact of the laboratory on clinical psychiatry in the four asylums under study by examining how the Wassermann test was used during the period from 1908 to 1930. The focus will be upon only those patients believed to have GPI. The other forms of neurosyphilis were so rarely tested that no meaningful analysis could be made. The sample of REA patients admitted between 1909 and 1930 who were given a final diagnosis of GPI indicates that 75 per cent of them received Wassermanns (70 out of 93 cases). For Gartnavel, 70 per cent of general paralytics received one or more Wassermanns in this period (71 of 101).[6] Despite this high incidence, more detailed study using patient case notes indicates that the relationship between testing and the diagnosis of GPI was irregular rather than uniform. I will argue that this is indicative of a problematic interaction between different approaches in psychiatry at the time, based upon the institution-specific practices of the 'laboratory' and the 'clinic' respectively.

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[4] In 1912, the most specialised diagnostic test for GPI was introduced, Lange's colloidal gold. Lange discovered that an abnormal amount of protein substance in cerebro-spinal fluid precipitated colloidal gold from solution, and that this precipitation occurred within certain dilution limits which were more or less specific to syphilitic conditions. However, this chapter will concentrate upon the Wassermann test, since the colloidal gold test was not introduced to Scottish asylums until the early 1920s, and even then sparingly. The reasons for this are unclear, although it is possible that these tests were simply not routinely noted in the case notes.

[5] See, for example, G. Zilboorg and W. Henry, *A History of Medical Psychology* (New York, Norton, 1941).

[6] For the parochial asylums, this proportion was far less. Woodilee diagnosed 111 neurosyphilitics in the period from 1909 to 1930, with 43 (39%) Wassermann tested. In the case of Rosslynlee, only one patient of 72 admitted with GPI in this period was Wassermann tested (although a number were tested just before admission, with the results recorded in the case notes).

The Establishment of Asylum Laboratories in Scotland

The Scottish Asylums' Pathological Scheme

By the 1890s there was a growing feeling within British psychiatry that there was a significant gap in pathology and technical sophistication between Britain and the rest of Europe, particularly Germany.[7] In response to this, the first British asylum laboratory was opened in 1895, when London County Council opened a laboratory at Claybury Asylum, Essex, utilising research in fields such as neurophysiology, genetics and endocrinology.[8] From its opening until 1926, the laboratory was under Frederick Mott's direction.[9] The Claybury Laboratory quickly established itself as an internationally renowned centre of neuropathological research, and was able to attract pathologists from around the world to undertake research.

The Edinburgh psychiatric profession was so impressed by the laboratory at Claybury that, a year later, REA Physician Superintendent Thomas Clouston began to organise a similar enterprise for Scotland. He referred to his scheme as 'this truly American Scheme'[10] due to the fact that further inspiration had been drawn from a Scheme of Research and Study recently set up by the State of New York in

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[7] The main hurdle seemed to have been that alienists were too burdened by administrative duties. See A. Beveridge, 'Thomas Clouston and the Edinburgh School of Psychiatry', in G. Berrios and H. Freeman (eds), *150 Years of British Psychiatry, 1841-1991* (London, Gaskell, 1991), p.380.

[8] This Laboratory was utilised to train medical officers and their laboratory assistants in scientific pathology, and served all Metropolitan Asylum Board asylums. In 1915, the laboratory was moved to new premises at the Maudsley Hospital, Denmark Hill, London. The Laboratory was an internationally renowned centre of neuropathological research, and was able to draw upon pathologists from around the world to undertake research. For more details, see A. Meyer, 'Frederick Mott, Founder of the Maudsley Laboratories', *British Journal of Psychiatry*, 122 (1973), 497-516; S. Mathews, '"Mind over Matter": The Contributions of Neuropathologist Sir Frederick Mott to British Psychiatry, c.1890-1926', Ph.D. thesis, University of Manchester (forthcoming).

[9] Frederick Mott (1853-1926) completed his medical studies at University College, London, in 1881. After travelling and studying abroad, Mott was appointed Assistant Professor of Physiology at Liverpool in 1883, but returned to London the following year as Lecturer in Physiology at Charing Cross Hospital Medical School. When, in 1895, the London County Council created the post of Pathologist to all the asylums under their charge and built a laboratory at Claybury in which this work might be carried out, Mott was their obvious choice for the post. Mott's research began to concentrate on the pathology of the nervous system and mental disease. In 1899, he founded the *Archives of Neurology*, the first three volumes being limited to original papers by Mott and other workers at the Claybury Laboratory. From the fourth volume, the title was altered to *Archives of Neurology and Psychiatry*, and widened its contributors.

[10] *86th Royal Edinburgh Asylum Annual Report*, 1898, LHB7/7/10, p.23.

connection with its State asylums, aiming to bring science 'to bear on the study of diseased brain and mind'.[11] The fact that the REA had the highest proportion of general paralytics in any Scottish asylum in this period may also have made a laboratory a more pressing issue, one of the first duties of the Laboratory being an investigation into the aetiology and pathology of this disorder.[12] Thus, to further what was described by Clouston as the 'splendid original work of enduring importance' being conducted in the Pathological Department of the REA by Dr. W. Ford Robertson,[13] a scheme began to evolve in 1896 in Edinburgh to associate most of the Scottish Asylums in pathological work. Once the aims of the Scottish Asylums' Pathological Scheme had been clearly established, Ford Robertson became the obvious candidate for the post.[14] He was thus appointed the first Pathologist under the scheme in 1897, and resigned as Pathologist of the REA to take up his duties as Laboratory Superintendent.[15]

The principal aim of the new Laboratory was to encourage pathological research among asylum doctors and provide slides for clinical demonstrations. It was suggested that the duties of the Pathologist should be to examine and report on morbid specimens sent from the various asylums; to give instructions to the officials

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[11] *Ibid.*

[12] By 1902, 21 per cent of male admissions to the REA were recorded as GPI (W. Ford Robertson, 'Discussion on the Pathology of General Paralysis of the Insane', *British Medical Journal*, 2 (1903), p.1067).

[13] *83rd Royal Edinburgh Asylum Annual Report*, 1895, LHB7/7/10, p.18

[14] William Ford Robertson (1867-1923) was a student in Edinburgh from 1886 to 1891. Even during his undergraduate course, he showed a particular interest in pathology as taught by Professor William Russell, who was then pathologist to the Edinburgh Royal Infirmary. After graduating, he held several Resident appointments, including House-Physician at the Edinburgh Royal Infirmary. Despite the poor prospects at this time of pathology as a specialty, Ford Robertson decided to devote his life to it. In 1893, he became pathologist to the REA, in succession to Dr. James Middlemass, who had been appointed one of its Assistant Physicians. His contributions to the medical literature were many, publishing numerous papers on the histology of insanity, tabes and GPI, dementia praecox and the parasitic origin of cancer. He wrote one of the earliest Scottish psychiatric textbooks on pathology, *A Textbook of Pathology in Relation to Mental Diseases* (1900), which was widely considered to represent the last word on the naked-eye and microscopical appearances of the brain and nervous system in insanity, and it covered the ground so thoroughly that it remained the standard work of reference on the subject at the time of his death.

[15] The first site of the Laboratory was 12 Bristo Place, rented from the Royal College of Physicians of Edinburgh. This arrangement ended in 1900, when the Laboratory obtained alternative premises in the grounds of the REA. In 1926, the Laboratory relocated to the Department of Clinical Medicine at the University of Edinburgh, and by the 1930s, the Laboratory was located at the Royal Infirmary of Edinburgh.

of the various Asylums on microscopic technique as applied to the nervous system; and to undertake original investigations on neurological subjects. Furthermore, the Conjoint Laboratory aimed to stimulate, support and facilitate scientific research of a similar nature in the individual asylums connected with it, rather than to suppress individual efforts: 'The general idea of the laboratory in no sense antagonises or supplants scientific research of a similar nature in the individual asylums. On the contrary', as the Commissioners in Lunacy for Scotland stated in their Forty-third Annual Report:

> there is reason to believe that the opportunities for prosecuting such work have been facilitated, and that, where an inclination exists to engage in it, the help of a central laboratory has been found of the greatest service.[16]

The Laboratory also aimed to train Assistant Medical Officers from the associated asylums in pathological methods, circulate 'demonstration sets' for comparison, instruction, and teaching purposes, and purchase a collection of books and magazines for reference and lending purposes, such objectives reflecting a new level of commitment to 'foster a scientific interest in pathological research throughout the Associated Asylums'.[17]

The Laboratory was soon funded by eighteen Royal and District asylums and almost entirely maintained by voluntary contributions from the governing bodies of the Scottish asylums. However, the bulk of the funding came from the REA, Gartnavel and Crichton. Besides providing spacious and suitable accommodation, special fittings and apparatus for the laboratory, the REA was spending at least £600 a year in salaries and working expenses. The Commissioners in Lunacy inspected the Laboratory during 1901, and commended its ongoing contribution 'towards elucidating the many difficult and obscure problems of Mental Disease' as 'the best

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[16] *Barony Parochial Asylum Annual Report*, 1905, GGHB30/2/14, p.80.
[17] *89th Royal Edinburgh Asylum Annual Report*, 1901, LHB7/7/10, pp18-9.

Figure 5.1: Asylums Contributing to the Edinburgh Laboratory in 1930 with a Breakdown of their Contributions

Aberdeen District	£62	5	10	(5%)
Banff District	10	0	0	(1)
Bangour Village	79	5	4	(6)
Dundee Royal	10	6	3	(1)
Dundee District	48	12	8	(4)
East Lothian District	22	0	7	(2)
Royal Edinburgh Hospital	102	4	2	(8)
Fife and Kinross District	75	14	6	(6)
Glengall Hospital	57	8	9	(5)
Inverness District	40	0	0	(3)
Lanarkshire District (Hartwood)	111	8	11	(9)
Lanarkshire District (Kirklands)	10	10	0	(1)
Midlothian & Peebles District	30	18	3	(2)
Montrose Royal	85	8	1	(7)
Morayshire District	15	9	9	(1)
Murray's Royal	30	17	11	(2)
Perth District	36	10	10	(3)
Roxburgh District	33	18	4	(3)
Royal Scottish National Institution	20	0	0	(2)
Stirling District	90	3	4	(7)
Isle of Man	10	0	0	(1)
Grant from Carnegie Trust	34	12	11	(3)
" " Edinburgh University	110	0	0	(9)
" " Medical Research Council	125	4	9	(10)
TOTAL	1253	1	2	(101)

Source: *34th Scottish Mental Hospitals' Pathological Scheme Annual Report*, 1930, GGHB21/2/4, p.7.

proof that the money spent on it by those Asylum Boards [was] well spent in the interests of the mentally afflicted'.[18] Their 1901 Annual Report concluded that:

> The Pathological Laboratory of the Scottish Asylums … has been successfully conducted, and has been productive of much scientific work of a high standard of excellence …. The large and varied amount of work in Morbid Histology, as evidenced by the various papers contributed from the Laboratory to scientific societies and journals, and the Text-Book recently published on the subject by Dr Ford Robertson, the Superintendent of the Laboratory – based, it is understood, chiefly on his practical researches – might alone be held to justify the expenditure of money, and the great amount of care and

[18] *Ibid.*, pp.17-8.

labour which have been bestowed upon the founding and maintenance of this Institute.[19]

Figure 5.1 shows the list of contributing asylums and their relative financial contributions to the Laboratory in 1930.

The Scottish Western Asylums' Research Institute

In 1908, the Board of Lunacy expressed concern that some asylums, chiefly in the west of Scotland, had withdrawn from the Scottish Asylums' Pathological Scheme.[20] This withdrawal seems to have been largely occasioned by the belief that the asylums of the west of Scotland, perceiving the benefits that had accrued from similar laboratories elsewhere, could maintain a laboratory of their own. Thus in October 1909, the Scottish Western Asylums' Research Institute (SWARI) was founded in the grounds of Gartnavel, with Dr. Ivy MacKenzie as its first Director. It represented a combination of eight asylums, and was situated beside Gartnavel.[21]

It was agreed that the Laboratory should be managed by a Board consisting of one representative of each contributing institution for each £100 or portion of £100 contributed by such institution, as well as the principal Medical Officer of each and the Professors of Practice of Medicine and Pathology in the University of Glasgow. The Managers of Gartnavel agreed to provide a house in their grounds, with a separate entrance from the public road, suitable for the purposes of the Laboratory, free of rent, taxes, coal, water and light, and to give, in addition, an annual financial contribution. The first Director, Ivy MacKenzie,[22] entered on his

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[19] *Ibid.*, p.18.

[20] *55th Board of Control for Scotland Annual Report*, 1913, GGHB13B/14/69, p.c.

[21] When the Laboratory was inaugurated, the associated bodies were Gartnavel, Gartloch, Woodilee, Hawkhead, Kirklands, Smithston Asylum, Riccartsbar Asylum, and Dykebar Asylum.

[22] Ivy Mackenzie (1877-1959) was one of Glasgow's most distinguished consultants. He graduated from the University of Glasgow M.B., Ch.B. in 1902, and M.D., with honours, in 1912. He was employed as a consultant to the Victoria Infirmary, Glasgow at the early age of 36, and was concurrently visiting physician to the Eastern District Hospital, where he had charge of the mental observation wards. In addition, he was Consulting Physician to the Glasgow District Board of Control, and a certifying physician in lunacy from 1914. Later, he became well known in medico-

duties at a salary of £300 per annum in November, 1909. The personnel of such a laboratory was seen to be of more importance than the elaborateness of its equipment,[23] and the representatives of the contributing asylums who managed the Laboratory considered themselves fortunate in obtaining MacKenzie as the first Director. It was made clear by SWARI officials that there was no intention that the laboratory should 'in any way conflict with the laboratory in Edinburgh'. According to Gartnavel Physician Superintendent Landel Oswald, it was established 'for the same purpose, ha[d] the same ends in view, and hope[d] to have a like measure of success'.[24] The SWARI's main objectives were 'to stimulate, organise and carry out research relating to all forms of nervous and mental disorder, including their pathology, prevention and treatment', as well as teaching medical officers and post-graduate students the methods of studying and treating nervous and mental disorders.[25]

The SWARI was inhibited by a variety of constraints, particularly issues of finance, staff, resources, and the dislocation of war. While both laboratories were supported by the voluntary contributions of their associated asylums, financial problems seemed to threaten the Glasgow Laboratory from the outset. In April 1913, when the SWARI seemed to be well established, MacKenzie intimated that he had accepted an appointment as Physician to the Victoria Infirmary, Glasgow, and could no longer devote the necessary time to the work of the SWARI. Difficulty was then experienced in securing the services of a suitably qualified director, with the salary of £300 per annum apparently not sufficient to attract experienced pathologists. Not until August 1914 was a new Director appointed when Dr. William Tulloch entered upon his duties. Tulloch was a skilled bacteriologist and had been Assistant in the Department of Pathology at the University of Durham. However, in May 1915, just as he was becoming familiar with the post, he resigned office in order to go on War Service. Thereafter, until December 1919, the SWARI was closed, owing to War

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legal circles and was recognised as an outstanding witness both in criminal and civil actions. His publications included contributions to anatomy, pathology, bacteriology, cardiology, neurology, and psychiatry.

[23] *96th Glasgow Royal Asylum Annual Report*, 1909, GGHB13B/2/223, pp.17 & 36.

[24] *Ibid.*, p.16.

[25] *Scottish Western Asylums' Research Institute Minute Book*, GGHB21/1/1, p.1.

conditions. The various associated bodies, however, continued to subscribe to its funds. After initial difficulties in attracting suitable applicants, Dr. William Whitelaw was appointed in December 1919.[26]

In view of the fact that the first three Laboratory Directors had resigned for financial reasons, and since contributors were so intent on obtaining specific and immediate results, in 1928 the SWARI Chairman questioned whether it was desirable to continue the SWARI, or whether it should amalgamate with the Edinburgh Laboratory. It was the unanimous opinion of the Executive Committee that the SWARI had been a most valuable adjunct to the work of the associated institutions and that it would be 'nothing short of a disaster' if the scheme were to be abandoned. Whilst it was agreed that the option of amalgamating with the Edinburgh laboratory might be kept in mind, it was felt that it would not fulfil their ideals, and that the asylums in and around Glasgow were sufficiently numerous and their patient populations large to form one unit for research. The Committee considered it a necessity that the Laboratory should be so situated that it should be readily accessible to the medical officers of the associated institutions and permit close personal contact between the Director and their medical staffs and patients, conditions that could not be fulfilled by amalgamation. In the Committee's view: 'So far as close contact was concerned the laboratory might as well be situated in Inverness or London as in Edinburgh.'[27] Thus the SWARI survived, although only temporarily. The finances of the Institute remained in deficit, and did not survive the formation of the National Health Service.

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[26] Whitelaw was recognised to be a skilled pathologist and bacteriologist. He had been for several years Assistant Pathologist at the Victoria Infirmary, Glasgow, and had served as pathologist and bacteriologist with the Military Forces at home and abroad.

[27] *20th Scottish Western Asylums' Research Institute Annual Report*, 1929, GGHB21/2/1, p.10.

Grand claims were understandably made in what had been the depressing field of GPI and early twentieth-century psychiatry, with the Wassermann reaction being hailed by some as the 'most reliable ... single blood test available to the worker in mental disease'.[28] Gartnavel Physician Superintendent David Henderson shared this enthusiasm, claiming that the Wassermann test was positive in blood in practically 100 per cent of GPI cases, and positive in cerebro-spinal fluid in about 95 per cent.[29] Scottish alienists seemed confident of the test's reliability, demonstrated by the fact that, of the 185 patients tested in the period from 1909 to 1930, 151 (82%) were only tested once. And yet it had quickly been realised outwith Scotland that it was possible to obtain a positive Wassermann reaction from a non-syphilitic blood sample or a negative one from a syphilitic sample without any major technical errors.[30] Physicians indicated that between 2 and 14 per cent of all Wassermann tests produced false positives, and should thus be frequently repeated.[31] As the St. Andrews bacteriologist Tulloch observed, if the attitude of the laboratory worker was 'that it is his duty to protect the non-syphilitic from unnecessary treatment, rather than to diagnose every case of the disease, active and latent',[32] he was on safe ground. If he set out to get a 100 per cent positive result rate in all types and stages of the disease, however, he would obtain positive results in non-syphilitics. For this reason it was strongly urged that, if in doubt concerning a result, the medical attendant should have the test repeated once, twice, or even three times.

One important strand of the Wassermann debate was the concentration on the intricate technicalities of the test. The Wassermann reaction was defined by S.

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[28] E. Southard and M. Jarrett, *The Kingdom of Evils* (London, Allen and Unwin, 1922), p.458.

[29] D. Henderson and R. Gillespie, *A Textbook of Psychiatry for Students and Practitioners* (London, Oxford University Press, 1927), p.299.

[30] This was most clearly demonstrated at the 1920s Wassermann Congresses held by the League of Nations, where the best serologists from various countries examined the same blood samples simultaneously but independently.

[31] A. Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States since 1880* (New York and Oxford, Oxford University Press, 1985), p.152.

[32] W. Tulloch, 'Notes on the Wassermann Reaction', *Edinburgh Medical Journal*, 27 (1921), p.53.

Grossman, an Assistant Medical Officer based in Cardiff, as: 'a complicated biological reaction, [requiring] expert knowledge, theoretical and practical, before any deductions can be made as to whether a patient suffers from neuro-syphilis or not'.[33] As well as being complicated, the test seemed to be a matter of individual preference in technique and in the use of the different sensitised haemolytic systems and various antigens. Different serologists tried to simplify the test, but even the simplest test was very complicated, and required special apparatus and much time. The multiplicity of the tests for syphilis led many authorities to plead for a standardisation of the procedure. In the 1918 report of the Medical Research Committee (MRC) on the standardisation of pathological methods regarding the Wassermann test, they first reassured that:

> In the opinion of the Committee there is no process of biochemical diagnosis that gives more trustworthy information or is liable to a smaller margin of error than the Wassermann test when it is performed with completeness and with proper skill and care.[34]

However, they did see that obvious advantages were to be gained from the standardisation of approved methods, and urged that Wassermann testing should be undertaken only by pathologists with 'adequate training and experience in the performance of the tests and the control observations which are necessary to it'.[35] The MRC made it clear that no-one should attempt to undertake Wassermann tests who was not capable of the highest technical accuracy, and in possession of full knowledge of the theory of the reaction. Mere acquaintance with ordinary laboratory procedure was not regarded as a sufficient criterion.

As well as technical difficulties, as Fleck observed, interpretation was more a mysterious art than a science, and required a delicate initiation passed from one laboratory worker to another. The field of laboratory syphilology was 'a little world

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[33] S. Grossman, 'The Value of Simple Laboratory Tests in the Diagnosis of Neuro-Syphilis as Compared with the Wassermann Reaction', *Journal of Mental Science*, 71 (1925), p.439.

[34] MRC Special Report Series No. 14: *Reports of the Special Committee upon the Standardisation of Pathological Methods: The Wassermann test (interim report)*, 1918, PRO FD4/14, p.21.

[35] S. Mann and F. Partner, 'The Wassermann Reaction in Mental Hospital Practice', *Archives of Neurology*, 10 (1931), p.1.

of its own ... the serological touch ... more important than calculation'.[36] Every laboratory used its own procedure, based upon precise quantitative calculations; and yet, the experienced eye or the 'serological touch' was most important. Here was the paradox of the Wassermann test. Introduced as the objective indicator of the elusive disease syphilis, it soon became clear that it could be interpreted only through the 'intuition' of the pathologist, with close negotiation between the pathologist and the clinician often proving either problematic or impossible, since each side tended to view the other's judgement with suspicion. As the historian, Lowy, points out, paradoxically, it was precisely the delicacy and technical complexity of the Wassermann that was used to maintain confidence in the accuracy of the test.[37] The serologists were, in the process, making themselves indispensable to the procedure. Thus a common view among serologists was that, while the Wassermann reaction was an infallible indication of the presence or absence of syphilitic infection, it had to be interpreted with intelligence and a regard for its essential limitations.

Attempts to standardise the test moved to an international level during the early 1920s, culminating in a series of recommendations issued by the League of Nations.[38] At the International Conference on the Standardisation of Sera and Serological tests, it was stated that: 'The desire for a standard serum test for syphilis has been voiced in many quarters', a desire that was easy to understand given:

> that five reagents [are] employed in the test – patient's serum, antigen, complement, blood cells, and haemolytic amboceptor; that there is no general agreement as to the amount of each which should be employed; and that there are wide differences of opinion as to the source and method of manufacture of the antigen, as well as on the conditions of incubation and the degree of complement fixation which may be regarded as positive for purposes of diagnosis. Further, each laboratory employs its own method of noting results, and it is not surprising that the clinician who receives a report from a laboratory

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[36] L. Fleck, *Genesis and Development of a Scientific Fact* (Chicago, University of Chicago Press, 1979), p.53.

[37] Cited in H. van den Belt, *Spirochaetes, Serology and Salvarsan: Ludwik Fleck and the Construction of Medical Knowledge about Syphilis* (Netherlands, Grafisch Bedrijf Ponsen and Looijen, 1997), p.152.

[38] 'International Conference on the Standardisation of Sera and Serological Tests', *Lancet*, 2 (1922), 1238-40.

> with whose standards and methods of notation he is not familiar is at a loss for a correct interpretation.[39]

Guidelines were soon being issued for laboratories to follow:

> The careful standardization of reagents may appear tedious and lengthy, but it must be strictly observed. Scrupulous cleanliness in the care of glassware is also essential .... It is not ... advisable that Wassermann reactions should be performed in laboratories where the required tests are few in number; they will be dealt with more satisfactorily at a central laboratory where large numbers of tests are made and where the various technical points are under constant supervision.[40]

The immunologist Ludwig Fleck analysed the 'genesis and development' of the Wassermann reaction as a clinically usable serological test for detecting syphilis. Fleck saw the test's creation as a response to increasing demands for a tool which could define syphilis according to the traditional 'thought style' of bad blood. The serendipitous path of this scientific discovery fascinated him. In his view, when Wassermann, Neisser, and Bruck first published on this serodiagnostic reaction in 1906, this did not yet constitute the 'discovery' of the Wassermann test. Rather, the test had to be 'developed' (by technical improvements and modifications) before the factual relationship with syphilis could be rightly said to be established. Fleck did not, however, locate an exact end-point in time for the completion of this process. Instead, he argued that by constantly 'tuning', the material procedure gradually tinkered its way toward success until it supposedly reached the balance point between insufficient sensitivity and too low specificity. For the Wassermann test, competence in performing the technical procedure was judged in part on the basis of the desired outcome, its conformity to the clinical signs. If it deviated from them, then the test required repetition or modification.

The 'scientific fact' to which the title of Fleck's book refers was the fact that the Wassermann reaction was related to syphilis. The establishment of this fact was seen as the result of a co-operative effort by the so-called 'serological thought

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[39] *Ibid.*, p.1238.

[40] Mann and Partner, 'The Wassermann Reaction', p.2.

collective' led by August Wassermann which, under the influence of the social urgency of the syphilis problem and ancient ideas about syphilitic blood, worked unceasingly to improve and perfect the test until a practically usable diagnostic instrument was finally obtained.[41] At the time of Fleck's writing in 1935, more than ten thousand scientific papers had already been published on the Wassermann test. However, as Henk van den Belt points out, if so much collective energy apparently had to be spent on this particular subject matter, then there may be something peculiar about the 'scientific fact' that Fleck selected as his example for epistemological investigation.[42] Perhaps this fact was not such a well-established fact after all. The very size of the collective effort may be reason for suspicion. A large part of the avalanche of papers consisted of proposals for modifications and simplifications of the Wassermann and of the closely related flocculation tests. This endless stream of modifications raises doubts as to whether the Wassermann ever achieved the degree of standardisation that is sometimes suggested and that might be thought required for the relationship with syphilis to qualify as a full-blown fact.

The Wassermann as a Diagnostic Tool

By 1929, of 192 tests on specimens carried out at the Edinburgh laboratory, 97 (51%) were Wassermann reactions, and a further 84 (44%) related to cerebro-spinal

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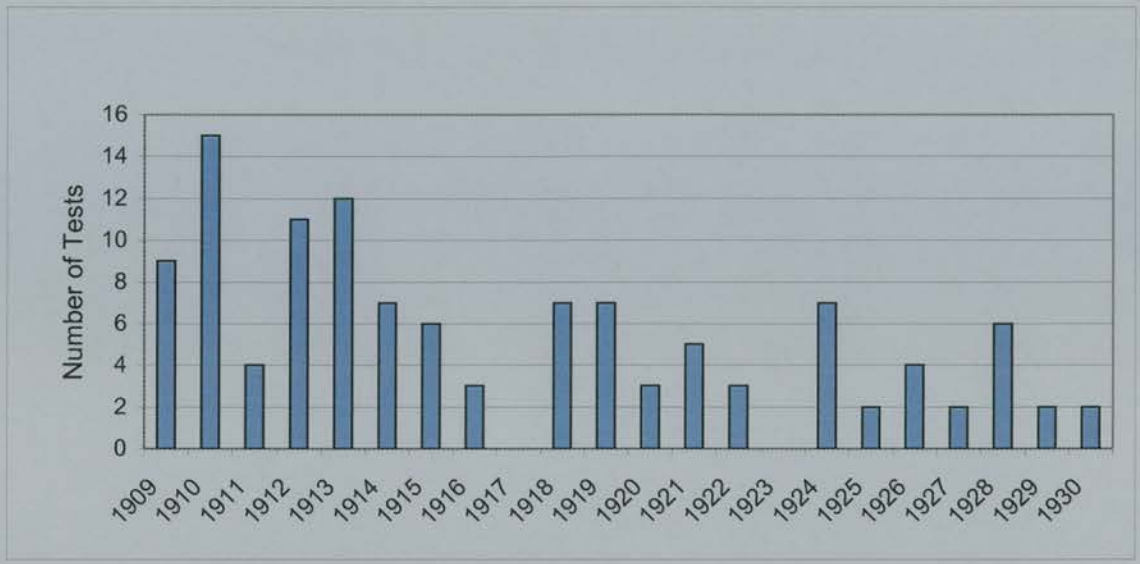
[41] Fleck's 'thought collectives' are specific interactive communities engaged in common tasks with their shared knowledge. Fleck sometimes wrote of thought collectives as relatively large-scale entities, such as political parties, nations, or all of the practitioners of a scientific discipline; but most of his analysis relied on an application of the term to much smaller units, the subcultures or research groups encountered in laboratories. See Fleck, *Genesis and Development of a Scientific Fact*, p.x.

[42] Van den Belt, *Spirochaetes, Serology and Salvarsan*, p.148.

Figure 5.2 Wassermann Testing at the REA and Rosslynlee, 1909-1930



Sources: *REA and Rosslynlee Case Notes*, LHB7/51/34-120 & LHB33/13/5-36.

fluid (colloidal gold, cell count and globulin).[43] The bulk of the specimens sent to the laboratory were to determine syphilis, although the Annual Reports speak of the laboratory's work as being equally concerned with all types of insanity. **Figure 5.2** is an overview of the Wassermanns (both blood and CSF) carried out by the laboratory for the REA and Rosslynlee over the period from 1909 to 1930.[44] The number of Wassermann tests conducted at the Edinburgh Laboratory generally decreased over this period, although with marked fluctuations.

The Wassermann test was first carried out at the SWARI in 1910, although regular testing was hampered during the War.[45] As **Figure 5.3** reveals, testing was not consistent, but increasing gradually over the period. It should be noted that

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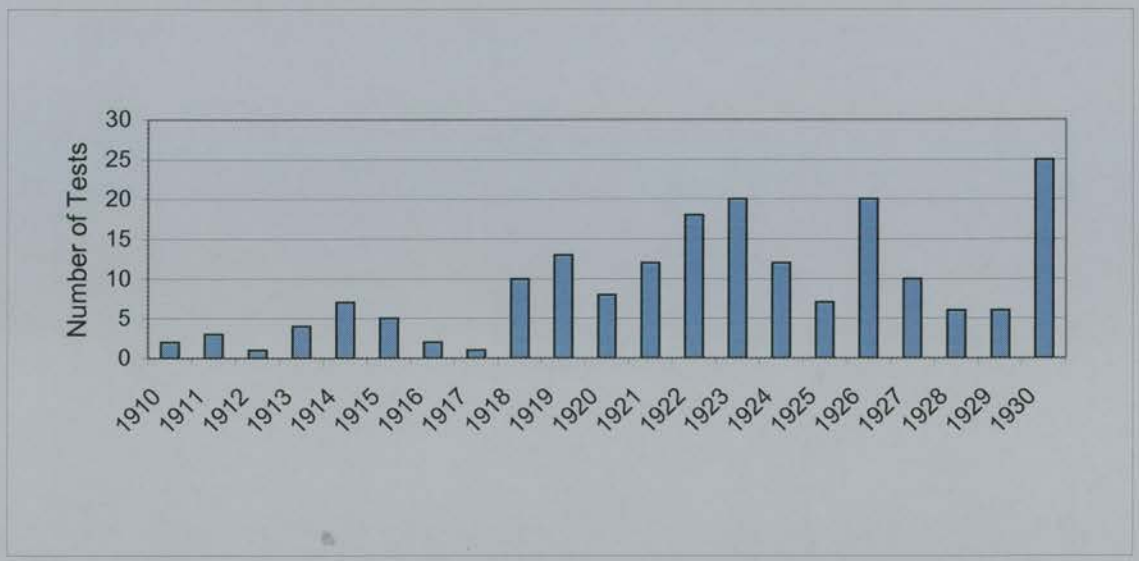
[43] *33rd Scottish Asylums' Pathological Scheme Annual Report*, 1929, GGHB21/2/3, p.7.

[44] Although they might offer a more accurate view of medical practice than journals and texts, case notes present their own interpretative problems, and can still only tell us a limited amount about how diagnostic decisions were made. In most of the asylum case notes, it was not documented exactly when the Wassermann test was performed, nor why; just as it is usually impossible to tell at which point during their stay a patient was assigned to a specific diagnostic category.

[45] Not until the early 1920s was special stationary devised to record the SWARI's findings. Before this, results were recorded as an integral part of the case notes. It is possible that, since the specialised stationary is not physically attached to the case notes, a few specimen results have been misplaced for

Figure 5.3 Wassermann Testing at Gartnavel and Woodilee, 1910-1930



Sources: *Gartnavel and Woodilee Case Notes*, GGHB13/5/123-148, GGHB13/5/149-177, GGHB13/5/178-194, GGHB30/4/1-63 & GGHB30/5/1-61.

this graph is quite different from the equivalent for the Edinburgh asylums, given that the number of tests over this period increases over the period, while the Edinburgh institutions appear to use the Laboratory less over time. The reasons for this are unclear, except of course that some of those institutions defected to the SWARI over this period. Such serological testing clearly took up much of the SWARI's time. In 1929, of 903 specimens examined, 295 (33%) were blood Wassermann tests, and 374 (41%) were cerebro-spinal fluid-related (Wassermann, Lange Cell Count and globulin), with the remaining involving faeces, urine, blood and pieces of brain (26%).[46]

The case notes reveal that in two-thirds of the Scottish tested patients, testing was done within a month of admission, so that the main purpose of testing seems to have been diagnostic. They were testing both patients already diagnosed with GPI

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the post-1920 period. And as the introduction pointed out, even those entries made directly onto the case notes were not always correct or complete.

[46] *20th Scottish Western Asylums' Research Institute Annual Report*, 1929, GGHB21/2/1, p.14.

and those whose diagnosis was in doubt but suspected to be GPI. However, as chapter four concluded, the published literature considered GPI to be a definite clinical entity long before serological tests were introduced, its identity having been well-established on clinical grounds by the mid-nineteenth century. There was a cluster of symptoms already strongly associated with the clinical diagnosis of GPI long before the first decade of the twentieth century, that crucial serological period in the history of syphilis and GPI. This raises the question of just how useful the laboratory could be to neurosyphilis, given the stability of the diagnostic category and supposed ease of diagnosis.

Despite being sure of the GPI diagnosis on admission, a Wassermann test was conducted anyway in a number of cases. In the REA, this was true of 52 year old widowed housewife Elizabeth Y., 42 year old married coach painter William N., and 39 year old married coal carter John S., all tested a month after their admissions in May 1915, August 1915 and November 1918 respectively, where the results were consistently positive and the diagnosis did not alter.[47] Alexander Y., a 37 year old married musician admitted in August 1919 and Wassermann tested the following month, was diagnosed with GPI, the case notes stating 'Patient's Wassermann reactions indicate GPI.'[48] With James T., a 52 year old married joiner admitted in October 1928, diagnosed with GPI, a: 'Lumbar puncture was performed about a month ago [November 1928] - conclusive of patient having general paralysis.'[49] Similarly, for Robert N., a 58 year old married contractor admitted in May 1918, already diagnosed a general paralytic: 'His blood Wassermann was positive and cerebro-spinal fluid showed excess of globulin lymphocytosis and positive Wassermann reaction.'[50] William P., a 37 year old married car driver admitted in July 1918, 'has looked very like a general paralytic, and his blood clinches the diagnosis'.[51] Regarding Margaret B., a 26 year old married ropeworker admitted in March 1919, Henderson wrote to her family general practitioner that:

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[47] *Royal Edinburgh Asylum Case Books*, LHB7/51/97/701, LHB7/51/98/509, and LHB7/51/103/885.
[48] *Ibid.*, LHB7/51/105/433.
[49] *Glasgow Royal Asylum Case Book*, GGHB13/5/187/632.
[50] *Ibid.*, GGHB13/5/145/389.
[51] *Ibid.*, GGHB13/5/145/491.

> The possibility seems to me to be that this is a case of general paralysis. I shall be able to speak much more definitely, however, once I hear the result of the Wassermann reaction [The result is positive] With this additional factor, I have now no doubt that the case is one of general paralysis.[52]

However, Henderson did use the phrase 'additional factor'. A final example is Susan N., an 18 year old single pawn clerk admitted in July 1921, of whom it was noted that:

> The possibility of Juvenile general paralysis has been entertained, but there are not yet sufficient signs and symptoms to confirm this diagnosis. [After testing] In view of the Wassermann reaction with the blood she is now regarded as a case of juvenile general paralysis.[53]

In such cases, the Wassermann result seems to have been used to reinforce the diagnosis.

Alternatively, the Wassermann was used on Mary S., a 44 year old married housewife admitted in May 1923, who had her diagnosis changed from manic depression to GPI on the basis of three Wassermann tests which were consistently positive.[54] Jane U., John N. and Alexander U. had their diagnoses changed from 'mania', 'mania of senile origin', and 'unknown' respectively to GPI on the basis of one positive Wassermann test. However, the clinical symptoms further supported these re-diagnoses. James M., a 56 year old married clerk admitted in February 1924 and diagnosed provisionally with organic brain disease,[55] was the subject of a staff meeting in 1924 to weigh up the various signs of disease. One point that Henderson drew attention to:

> was the late onset of the illness - after fifty years being unusually late in a case of General Paralysis. Patient was able to work until 1921. [Henderson] was of the opinion, however, that the case was one of General Paralysis, facts in favour of this being that the seizures which the patient had had rapidly passed off, leaving no residuals: the fact of his pupils: the fact of his cell count and Wassermann. On the other

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[52] *Ibid.*, GGHB13/5/190/817.

[53] *Barony Parochial Asylum Case Book*, GGHB30/4/51/61.

[54] *Glasgow Royal Asylum Case Book*, GGHB13/5/183/354.

[55] Of which GPI is a form.

> hand, there were certain unusual features - his personality was very well retained, his memory was still wonderfully good, and his mental activity in general was also very good.[56]

A post-mortem diagnosis of GPI was recorded. Clearly clinical and serological evidence was being weighed up in these cases. Henderson believed the Wassermann reaction to be helpful in eliminating GPI as a diagnosis. Since GPI was 'the great imitator' of other illnesses, like manic depression and melancholia, Henderson utilised the test to distinguish GPI from these other disorders.

Then there were the more complicated relations between the Wassermann reaction and diagnosis. A number of case notes made special mention of the clinical criteria, but no mention of the positive Wassermann tests. Admitted in August 1913, 33 year old married plasterer Robert C.'s 'physical signs and mental symptoms [are] suggestive of GPI'.[57] William L., a 37 year old married patient admitted in August 1923: 'Seems very like early GPI. Against it is the cell count of the cerebro-spinal fluid.'[58] However, this did not dissuade them from giving a GPI diagnosis. Then there were those with negative Wassermanns. 33 year old married maltman John N. and 49 year old single tailoress Elizabeth D., admitted in May 1903 and January 1905 respectively, had their diagnoses changed from mania to GPI despite a negative Wassermann.[59] In both cases, some of the physical and mental symptoms of GPI began to develop after admission. In the case of Margaret Y., a 44 year old single female admitted in May 1905, the diagnosis of GPI was retained despite a negative Wassermann, based on the fact that the patient was 'a demented emotionally depressed general paralytic with well marked motor symptoms'.[60] Alexander C., a 43 year old married dairyman admitted in June 1908, was diagnosed with mania, and had a negative Wassermann test result recorded, with the accompanying statement:

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[56] *Glasgow Royal Asylum Case Book*, GGHB13/5/181/285.
[57] *Royal Edinburgh Asylum Case Book*, LHB7/51/95/553.
[58] *Glasgow Royal Asylum Case Book*, GGHB13/5/182/292.
[59] *Royal Edinburgh Asylum Case Book*, LHB7/51/82/365 and LHB7/51/85/345.
[60] *Ibid.*, LHB7/51/85/605.

> He presents some of the features of general paralysis but it is difficult to definitely come to a diagnosis .... The case is becoming more clearly one of general paralysis from physical signs and symptoms.[61]

On the other hand, Susan H., James B. and Robert S. were diagnosed with melancholia or epileptic insanity rather than GPI, despite a positive Wassermann. William S., a 40 year old married coal miner admitted in April 1928, was diagnosed with mania on admission to Rosslynlee, despite the fact that: 'When at Bangour, the serological reactions were blood WR +++, CSF WR +++, Pandy's test +++, Cells 49 per c.mm. Colloidal gold 555,555,431,10 (strong paretic).'[62] Mary C., a 35 year old married housewife admitted in February 1913, had her diagnosis altered from manic depressive insanity to congenital deficiency and mania despite a positive Wassermann.[63] Admitted in July 1920, 70 year old widower John Y.'s diagnosis of senile dementia on admission was revised to tabes with psychosis, without the use of serological testing.[64] In the case of Jane F., a 38 year old single fishworker admitted in July 1911, the thinking behind her retention of the diagnosis 'subacute delirious insanity' was elaborated upon:

> A case of delirious insanity showing considerable disorientation, very confused and restless. She does not seem to be a GP[I] – the matter has been gone into thoroughly and she is thought to be an epileptic though the CSF is most suspicious of GPI.[65]

In a number of cases, the laboratory findings were thus ignored or contradicted. In fact, a detailed reading of the case notes reveals a complicated relationship between Wassermann testing, clinical data, and GPI diagnosis. Indeed six different possible relations can be detected between the Wassermann test and GPI diagnosis in each of the four asylums (see **Figure 5.4**). A patient could be diagnosed

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[61] *Ibid.*, LHB7/51/89/821.
[62] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/35/69.
[63] *Royal Edinburgh Asylum Case Book*, LHB7/51/94/789.
[64] *Glasgow Royal Asylum Case Book*, GGHB13/5/147/205.
[65] *Royal Edinburgh Asylum Case Book*, LHB7/51/94/301.

or re-diagnosed with or without the aid of the laboratory, including where the test result was negative. Such observations suggest that the test itself was not over-enthusiastically used to define the diagnosis of GPI.

Figure 5.4 Relations between Wassermann Testing and GPI Diagnosis in the Scottish Asylums

GPI diagnosis Without testing	GPI diagnosis With testing +ve	GPI diagnosis With testing –ve
GPI re-diagnosis Without testing	GPI re-diagnosis With testing +ve	GPI re-diagnosis With testing –ve

Despite the problematic relationship illustrated in the case notes between the laboratory and diagnosis, the published comments of a number of the Scottish alienists would make one assume that the laboratory was quickly integrated into the process of psychiatric diagnosis. As early as 1904, before the introduction of Wassermann testing, with regard to an obscure case of GPI, Clouston claimed to be most impressed by REA Assistant Physician Dr. G. Douglas McRae's conclusion: 'It must be general paralysis, for I have been over to the laboratory and have found the characteristic diptheroid bacillus.' Clouston added: 'Whether he was right or wrong as to his conclusion, this spirit and this mode of work is that of modern science, a method not dreamed of in the diagnosis of mental disease ten years ago.'[66] For many who published in the early years of the test, the new 'Wassermann' definition of GPI seemed triumphant over the old clinical criteria. Thus by 1912, REA Physician Superintendent George Robertson could pronounce that:

> The accurate diagnosis of some of the organic diseases of the brain has now reached such a degree of complexity that it can only be arrived at after a chemical examination of the blood and other fluids has been made by an expert in the laboratory.[67]

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[66] *92nd Royal Edinburgh Asylum Annual Report*, 1904, LHB7/7/11, p.21.
[67] *100th Royal Edinburgh Asylum Annual Report*, 1912, LHB7/7/12, p.21.

This comment particularly related to GPI, a disease which the laboratory had apparently revolutionised:

> Till little more than three or four years ago there was no certainty in some cases that the diagnosis was a correct one. Early cases were not always diagnosed, and cases were not rarely found to have been wrongly diagnosed .... This uncertainty has sometimes proved intolerable when important issues were at stake, and a piece of the brain has actually been removed during life for microscopical examination to settle this question. We are now able to diagnose this disease with absolute certainty in the earliest stage by means of chemical and microscopical tests.[68]

Robertson neatly concluded:

> If the Wassermann reaction be negative in the spinal fluid as well as in the blood-serum then general paralysis may now, with almost absolute certainty, be excluded in spite of clinical symptoms.[69]

No longer had psychiatry to rely on either observation of symptoms (mental and physical) or the patient's history as supplied by the patient or family. These tests would complement or even outweigh clinical evidence. The value of the test in determining syphilis where the clinician suspected it but the patient denied having suffered from it was strongly defended. Its function in uncovering obscure or even deliberately hidden cases remained a powerful theme. Syphilis was widely deemed to be a 'dishonest disease', and syphilitic patients were themselves frequently dishonest: the test's potential as a lie detector was agreed to be immense.[70]

However, such positive verdicts of the place of the laboratory within clinical psychiatry were increasingly interspersed with more critical comments and articles. Among this group of physicians, there were grave concerns about the tendency of the laboratory to usurp the place of clinical experience. Henderson recognised the test's limitations:

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[68] G. Robertson, 'General Paralysis of the Insane: The Morison Lectures', *Journal of Mental Science,* 59 (1913), p.196.

[69] *Ibid.*

[70] There simply had to be a balance between outing these cases without wrongly branding 'innocent' non-syphilitics.

> Although the Wassermann reaction is usually an aid to diagnosis, one must not forget that it is by no means a specific reaction, and it requires to be interpreted with caution and in the light of the whole clinical picture.[71]

By 1933, in response to such criticisms, SWARI officials were explicitly iterating one of their aims as being to maintain a critical attitude towards established methods for the sero-diagnosis of syphilis, and perhaps more especially regarding the Wassermann upon which, it was felt, too complete reliance could be placed.[72]

Such criticism was similarly gathering strength throughout Britain. In 1911, the army surgeon French, for example, eloquently cautioned against the allure of the laboratory:

> I put the clinical aspect [of diagnosis] last, but in my opinion it is by no means the least valuable. It does not perhaps glitter like the gold of the spirochaete, nor sound like the brazen cymbal of a positive Wassermann reaction, but as regards induration in the chancre it has the intrinsic merit of home manufacture .... Whatever each individual may think about the relative significance of Wassermann reactions, the fact must be admitted that in many instances we are as dependant today upon a correct clinical interpretation of what we see as in the past when John Hunter wrote.[73]

By 1921, Marshall and Ffrench were warning that:

> There is a dangerous tendency at the present day to exalt the value of laboratory diagnosis and neglect that of clinical experience. A diagnosis based upon laboratory tests alone may lead to disastrous consequences both to the patient and the practitioner ....[74]

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[71] D. Henderson, 'The Diagnosis of Cerebral Syphilis', *Review of Neurology and Psychiatry*, 9 (1911), pp.244-5.

[72] *Scottish Western Asylums Research Institute Annual Report*, 1933, GGHB21/2/2, p.6.

[73] Quoted in J. Hurn, 'The History of General Paralysis of the Insane in Britain, 1830 to 1950', Ph.D. thesis, University of London (1998), pp.154-5.

[74] Correspondence, 'The Value of the Wassermann Reaction', *British Medical Journal*, 1 (1921), p.686.

This smacks of the ethos prevalent among fin-de-siècle London consultants described by Lawrence[75] which emphasised the intuitive aspects of the clinician's art and denied that these could be superseded by the findings of a laboratory science. It was felt that laboratory techniques were in danger of reducing the complexities of diagnosis to a routine procedure. GPI was a definite clinical entity long before laboratory tests were introduced to the asylum, and these tests might introduce a fallacy, which presumably the clinical judgement of the physician would not. It seems that, rather than accept science into the asylum as a way to further their status as bona fide men of medicine, the clinical experience which alienists, alone, possessed was far more reliable.

The situation was complex and divided between those clinicians who welcomed the Wassermann, and those who resented or mistrusted it. Although the test was received by many as a triumphant tool of science, ambivalence towards the claims of the laboratory was as clear within psychiatry as in other areas of medicine. Ever since the introduction of the Wassermann test, there had been those who deplored the separation and mutual suspicion between clinical and laboratory experts. The venereologist Colonel Harrison noted that:

> Often ... I find clinicians and pathologists working in watertight compartments and not a little mutual suspicion between two classes of worker whose close co-operation is essential to progress. As an example, you know that not a little criticism has been levelled at the reliability of the serum tests of syphilis. I think that much of this criticism springs from a lack of knowledge, on the part of many clinicians, of the scientific principles and technique of the tests and consequent inability to understand the point of view of the pathologist. Often enough I have heard clinicians criticise particular results as contrary to the clinical findings when it is clear to any one with a knowledge of the tests in question that the pathologist most probably never intended the interpretation of his report which had been made of it by the complaining clinician.[76]

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[75] C. Lawrence, 'Incommunicable Knowledge: Science, Technology, and the Clinical Art in Britain, 1850-1914', *Journal of Contemporary History*, 20 (1985), 503-20.

[76] L. Harrison, 'The Role of the Pathologist in the Recognition and Treatment of Syphilis', *British Medical Journal*, 2 (1911), 686-7.

Clinicians, Harrison claimed, criticised the test because they did not understand it; whereas pathologists worked in blinkered isolation, and took no interest in the concerns of the clinician. He referred to 'the folly and danger of rivalry instead of co-operation between the clinician and the pathologist'.[77] He argued that serologists would have to convince clinicians of the value and reliability of the Wassermann reaction, but in carrying out this task they appeared to be confronted with an insurmountable problem: If the outcome of the Wassermann reaction confirmed the clinicians' judgement, this would be fine, but it would not add anything new to what clinicians already claimed to know. The situation would be different if laboratory reaction and clinical judgement pointed in opposite directions – but in that case the serologists would be hard-pressed to persuade the clinicians of the correctness of the reaction.

A clear reflection of the degree of concern was the efforts of the Edinburgh Laboratory contributing asylums to unite these groups of clinicians and laboratory workers. For example, meetings were held from 1936 onwards at which there was an attempt to bridge the gap between both sides. Various suggestions were made for better contact between the Pathologist and these various asylums, including the proposal that members of staff of these asylums might come to the Laboratory where the Pathologist would meet them and discuss cases. The first of these meetings was held on 27 May 1936 when Henry Biggart, Laboratory Pathologist, met eleven members of staff from various asylums. Some hours were spent in demonstrating and discussing several of the more interesting recent cases from asylums. It was principally hoped that these meetings would help bridge the gap between the clinician and the pathologist. Scottish pathologists were also visiting several of the more accessible asylums to discuss clinical and administrative problems, although such visits were of necessity infrequent and did little towards advancing 'the laboratory side of the picture' according to the 1936 Annual Report.[78]

Meanwhile, more generally, the national picture is revealed in a meeting of the Medico-Psychological Association. Under the auspices of the General Paralysis

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[77] Correspondence, 'The Value of the Wassermann Reaction', p.686.

[78] *39th Scottish Mental Hospitals' Pathological Scheme Annual Report*, 1936, GGHB21/2/5, p.7.

Sub-Committee in January 1929, both sides of the debate attempted to resolve this clear tension between how far clinicians could rely on the Wassermann test to aid diagnosis. The main questions betrayed very noticeably a critical attitude to serological testing, asking:

> 1) Is the diagnosis of general paralysis justified on laboratory findings only, that is, without the support of (a) mental, (b) physical, or (c) both mental and physical signs? If not, then what physical and mental symptoms are necessary to support laboratory findings in order to justify a diagnosis of general paralysis? 2) To what extent is there unanimity of opinion as to the laboratory findings which justify or support the diagnosis of general paralysis?[79]

In the ensuing discussion, John Brander, Deputy Medical Superintendent of Bexley Mental Hospital, pointed out that, while a few years ago they had been able clearly to diagnose GPI, the introduction of serological methods caused many other conditions now to be classified as GPI. Brander and his colleagues began to send specimens of blood and cerebro-spinal fluid to the laboratory 'as a matter of curiosity', merely to see what the pathologist would report, for the diagnoses had already been made. If a report came back negative, they merely sent the specimens back until the laboratory acknowledged technical errors. However, he added that some other diagnoses arrived at clinically were altered to GPI on the strength of the laboratory's findings.[80] Dr. R. Stewart of Leavesden said he had gained the impression from remarks which had been made, and particularly from the phrasing of the questions:

> that laboratory findings were in danger of being given too prominent a position in the diagnosis of general paralysis. Surely laboratory techniques must always have a subordinate place in diagnosis, and could never supplant the results obtained from careful clinical observation.[81]

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[79] Discussion, 'General Paralysis', *Journal of Mental Science*, 75 (1929), pp.1-2.
[80] *Ibid.*, p.3.
[81] *Ibid.*, p.11.

In concluding the discussion, the preponderance of opinion was in favour of the view that no single test or combination of tests was sufficient to establish the diagnosis of GPI. While of great value in indicating syphilitic infection of the nervous system, they could not be relied upon to differentiate with certainty GPI from other forms of neurosyphilis. The important point in diagnosis was a combination of the various symptoms. No one had the right to diagnose GPI from the mental symptoms alone, nor from the physical signs alone, nor from the laboratory findings alone. Henceforth, resources should be fully utilised to make use of all three possible diagnostic elements – the mental, physical and serological evidence.

The Identity of GPI

In 1914, one doctor noted that:

> The discovery of the spirochaete and of the Wassermann ... has thrown the whole subject of syphilis into the melting-pot, from which new conceptions of the disease are emerging .... These are still malleable, and fresh investigations are daily entailing their remodelling.[82]

As a result of the extent to which positive reactions were being found in patients displaying symptoms not previously understood to lie within the pathogenesis of syphilis, clinicians and pathologists were amending and building upon previous understandings of the aetiology and diagnosis of syphilis and GPI. The Wassermann test, it seems, was redefining syphilis.

In the first decade or two after the Wassermann entered psychiatry, a number of retrospective studies attempted to put right past diagnostic errors, with the aid of the Wassermann. In 'A Study of Some Cases Diagnosed as Paresis in Pre-Wassermann Days', the very title of which suggests that those past clinically-

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[82] H. Armstrong, 'On Some Clinical Manifestations of Congenital Syphilis', *British Medical Journal*, 1 (1914), p.960.

diagnosed GPI cases now had to be verified by the laboratory, the blood serum of patients admitted to Danvers State Hospital, Massachusetts, was analysed.[83] It was found that, had the Wassermann and spinal fluid tests been available at the time these patients presented for diagnosis, GPI might have been immediately excluded in some instances: 'Clinical observation over a sufficient length of time will correct the diagnosis in the majority of cases, but this method has very obvious disadvantages.'[84] According to such accounts, the Wassermann test clearly allowed the diagnosis of GPI to be made much more accurately than had previously been possible.

However, the 1929 discussion of the Medico-Psychological Association provided an interesting contrast to such earlier claims that the test had tightened the diagnosis of the disease.[85] The diagnostic developments of the early-twentieth century were, they suggested, giving rise to an increasingly fragmented and unstable developing identity for GPI. Alienists agreed that the clinical features of GPI appeared to have become increasingly diverse, particularly since the War. John Brander, a Bexley physician, was a fervent exponent and good representative of the view that the identity of GPI, confidently established by the clinical methods of the older generation of alienists, was being broadened and muddied by an over-zealous faith in the laboratory. 'Let it be remembered', he pointed out:

> that the diagnostic criteria of this disease and its fatal progression were developed many years before the days of the ... Wassermann test .... In recent years any mental disease - whatever the history, whatever the physical signs, if it did not respond to treatment and showed a persistent Wassermann reaction - was general paralysis.[86]

Brander concluded that there was 'far too great a tendency to attribute to syphilis any mental disorder which happens to be associated with a positive Wassermann

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[83] L. Lowrey, 'A Study of Some Cases Diagnosed as Paresis in Pre-Wassermann Days', *Journal of Nervous and Mental Disease*, 43 (1916), pp.324-32.

[84] *Ibid.*, p.332.

[85] Discussion, 'General Paralysis'.

[86] J. Brander, 'The Diagnosis of GPI as a Clinical and Pathological Entity', *Journal of Mental Science*, 74 (1928), p.675.

Reaction'.[87] His objections demonstrate that, to some at least, the question of how GPI should be defined had not been closed by the advent of laboratory criteria. Brander suggested that cures (as a result of malaria therapy) were being wrongly claimed for these new Wassermann-defined forms of GPI, leading to an unjustified therapeutic optimism. GPI was, he insisted, by definition an incurable disease, and when diagnosed on clinical grounds alone was fatal in practically 100 per cent of cases. The large number of current cases which improved or remained stationary for long periods of time were simply not GPI.

The General Paralysis Sub-Committee of the MPA took up Brander's charges, but did not uphold them. The mistakes that Brander referred to, the meeting decided, had occurred back in the period from 1910 to 1912 when the test was new, and 'some modern men had placed too much stress on laboratory findings'.[88] Since then things had changed, and 'the present teaching was for the clinical findings to have the predominance every time'.[89] It was generally agreed that more varied clinical phenomena were now being treated as GPI; but whereas Brander maintained that this was due to changes in diagnosis directly resulting from over-reliance on the Wassermann reaction, the majority contended that the disease was indeed manifesting in new forms, many of which were treatable.

Laboratory medicine – represented by the Wassermann test – seemed to have completed the reformulation of syphilis. The laboratory was clearly regarded as providing more authoritative evidence than Fournier's statistics in forging the GPI-syphilis link, as demonstrated by the rapid change in terminology from 'parasyphilis' to the rigorously aetiological 'neurosyphilis' - unequivocal syphilis of the nervous system manifesting as GPI or tabes dorsalis. Just as the discovery of the spirochaete was a significant step towards proving the organic aetiology of insanity, the Wassermann test was a step towards proving the 'scientific' basis of a psychiatric diagnosis. One might argue that the position of clinical alienists is to be understood in terms of a professional claim to knowledge of particular diseases. Psychiatry, as a

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[87] *Ibid.*, p.683.
[88] Discussion, 'General Paralysis', p.290.
[89] *Ibid.*, p.280.

medical speciality, had more need than most to reinforce its legitimacy, and yet on a practical level did not come to rely upon the laboratory as it might have done. On an individual level, alienists were often ambivalent as to how they should incorporate the new laboratory tools into their practice. We certainly cannot take at face value claims that the test revolutionised the management of GPI and was fully accepted by practitioners; nor that it was seized upon indiscriminately simply because it represented the excitement and status of laboratory medicine. Yet it certainly seems fair to say that the greatest importance of the Wassermann test lay in its symbolic or rhetorical, rather than its practical, power.

Although the Wassermann test quickly became a mainstay of asylum practice, we should be cautious in suggesting that it transformed GPI from a symptom-defined to a laboratory-defined disease.[90] We cannot assume, for example, that it really led to great changes in either the number of general paralytics diagnosed, or the way in which the diagnosis was made. Hare, in his epidemiological study of the disorder, noted: 'I cannot find that, on the whole, there was any sudden fluctuation in the reported incidence or mortality of the disease after the introduction of objective methods of diagnosis', a statement which supported his own suggestion that GPI had been accurately diagnosed during the nineteenth century, and so was amenable to retrospective analysis.[91] Admission figures for the Scottish asylums show a very gradual rise between 1880 and 1930 of GPI admissions and deaths, with fluctuations from year to year. In Gartnavel, the only noticeable rise in admissions was for the years 1918 to 1921, but like Woodilee and Rosslynlee the figures rose gradually with slight fluctuations from year to year. However, the REA reports recorded its GPI admissions and deaths increasing till about the mid-1910s, with then a reduction in GPI cases. Hurn has found a similar pattern of diminishing numbers for the English asylums.[92]

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[90] As, for example, Cunningham portrays the transformation of plague at the beginning of the twentieth century: see A. Cunningham, 'Transforming Plague', in A. Cunningham and P. Williams (eds), *The Laboratory Revolution in Medicine* (Cambridge, Cambridge University Press, 1992), 209–44.

[91] E. Hare, 'The Origin and Spread of Dementia Paralytica', *Journal of Mental Science*, 105 (1959), p.613.

[92] Hurn, 'The History of General Paralysis', pp.171-2.

Such changes are open to a number of interpretations. It is certainly possible that a proportion of the small drop in REA admissions was due to the Wassermann test reducing the number of patients in which the diagnosis was made - but it is unlikely that it was considerable. The War may also have been a factor in the reduction in REA cases. More importantly, the figures counter the claim that the test might have been used to over-diagnose GPI in asylums through an exaggerated faith in laboratory criteria. Even for those asylums where admissions continued to rise, the rise was very small indeed, and in line with the pre-Wassermann period. Robertson, a self-confessed devotee of the Wassermann test, estimated that it had increased the diagnostic accuracy of GPI by 6 to 15 per cent, primarily by differentiating it from the two conditions agreed to present themselves most similarly - cerebral syphilis and alcoholic insanity.[93] Such estimates were based upon studies in which diagnoses during life were compared with post-mortem diagnoses. For the REA, Robertson's statement is validated by the case notes, for the majority of erroneous diagnoses (that is, those patients admitted with another disorder which was changed to GPI later in their stay or at death) occurred in the pre-Wassermann period. This is also true of Woodilee, where few patients had their initial diagnoses changed to GPI after admission post-1910. The Rosslynlee case notes record erroneous initial diagnoses throughout this period, as one might expect given this Institution's reluctance to use laboratory methods. However, Gartnavel is quite different in this regard. The majority of erroneous diagnoses changed to GPI in this Institution were recorded in the post-Wassermann period, for reasons which are unclear.

In the period from 1880 to 1930, the symptoms associated with GPI in the four Scottish asylums remained fairly static, despite the supposed impact of the laboratory on methods of diagnosis. All four asylums retained the core cluster of symptoms in the admission certificates of GPI patients discussed in chapter four, in particular 'delusions', 'restlessness', 'excitement', 'incoherence', and 'memory impairment'. Only one or two of the core symptoms differed before and after the Wassermann test was introduced. In Rosslynlee, patients who were 'violent' or

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[93] Robertson, 'General Paralysis', p.215.

'threaten violence' were met with far less frequently in the Wassermann period than were before. Similarly, the REA admitted fewer 'threatening or dangerous' patients in the Wassermann era. For Gartnavel, only 'confusion' was noted much more frequently in the Wassermann era admission certificates. However, it should be mentioned that Gartnavel witnessed more diversity of symptoms in its general paralytics than the other asylums during this period. Alternatively, in Woodilee, a number of symptoms became much more commonly noted in the Wassermann period. These principally included 'signs of organic brain disorder', 'problems with articulation', and patients being 'dirty in habits'. Woodilee also witnessed a marked increase in the number of delusions of persecution and suspicion after the Wassermann was introduced. However, within each of the Scottish institutions, the grandeur type was still the most common. On the whole, it can be seen that the core cluster of GPI symptoms barely altered in the Wassermann period from that described in the previous chapter on pre-1910 admissions, so that it is difficult to substantiate the claims of Brander and his supporters. Patterns of diagnosis for the Scottish asylums hardly reveal a level of discontinuity which might suggest that there was a major change in the number of patients diagnosed as a result of the Wassermann test, or indeed a wholesale broadening of the diagnosis.

Serological Cure

Although this chapter has been principally concerned with the diagnostic application of the Wassermann reaction, the test was in fact more unambiguously used as a means by which to measure 'cure'. Where clinicians were reasonably confident in their initial diagnosis, they were more likely to consult the laboratory to check if treatment had been successful. In fact, the dermatologist Neisser, instrumental in the development of the original test, had been primarily motivated by a therapeutic, and not a diagnostic, interest in the development of a serological test for syphilis.[94]

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[94] Van den Belt, *Spirochaetes, Serology and Salvarsan*, p.156.

Although in the four Scottish asylums the majority of patients were only tested on admission (and thus probably for diagnostic reasons), a small number were multiple-tested during their stay.[95] Of the post-1908 admissions, 7 per cent of Woodilee patients were multiple-tested, with 10 per cent being the figure for REA patients. Gartnavel, however, multiple-tested a substantial 25 per cent of its Wassermann-tested patients. The purpose of this multiple testing appears to have related to the desire to measure efficacy of treatment. After all: 'Without the Wassermann reaction we have no means of judging, in the great majority of cases, as to when cure has taken place.'[96]

Thus multiple-testing patterns of patients were usually linked to their treatment regimes. Such seems to have been the case for Alexander C., a 36 year old married clerk admitted to Gartnavel in February 1917, who had a Wassermann test, followed by:

> a course of salvarsan, five injections in all, the maximum dose on the last two occasions. In addition a very copious mercurial and iodine course was administered, but the blood gave a positive reaction after all. After the third injection there appeared to be a marked improvement, but the effect was only temporary.[97]

James O., a 28 year old married patient admitted in July 1930, had three tests over a period of four months in late 1930, while receiving malarial and tryparsamide treatment.[98] Robert N., a 53 year old married mechanic admitted to Woodilee in July 1925, received three tests, one before and two after malarial therapy.[99] 41 year old widowed tracer William U.'s six tests related to a course of 14 injections of tryparsamide administered in March and April, 1924 and 1926.[100] The results of their tests were consistently positive, and both were discharged 'relieved' rather than

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[95] I am taking 'multiple' to mean tested more than once.

[96] ? Gibbs and ? Bayly, 'The Comparative Value of the Various Methods of Anti-Syphilitic Treatment', *Lancet*, 1 (1910), p.1256.

[97] *Glasgow Royal Asylum Case Book*, GGHB13/5/144/396.

[98] *Ibid.*, GGHB13/5/189/814.

[99] *Barony Parochial Asylum Case Book*, GGHB30/4/57/12.

[100] *Royal Edinburgh Asylum Case Book*, LHB7/51/112/201.

'recovered'. Admitted to Woodilee in October 1925, 41 year old married railway clerk John S.'s 'blood shows a strong positive reaction to the Wassermann test. So that he has had 45gm neosalvarsan intravenously'.[101] Alexander N., a 49 year old single iron worker admitted in November 1911, was described in the progress notes as being 'physically much better than he has been for some time. He was advised, however, to go on with sulpharsenol treatment in London in view of the still positive Wassermann'.[102] Finally, 44 year old married housewife Elizabeth N., admitted to the REA in April 1928, who had four Wassermann tests, received malarial therapy followed by tryparsamide and Bismuth injections, the Wassermann tests being taken just before and six months after the malarial treatment.[103] A large number of specimens sent to the SWARI in 1929 were blood and cerebro-spinal fluids from the general paralytics undergoing malarial treatment in the various affiliated asylums. The Laboratory's Annual Report stated that: 'The results of treatment are carefully followed out, repeated examinations of the blood and cerebro-spinal fluid being made.'[104]

There were occasional cases where specimens were regularly taken, despite 'GPI' having been diagnosed at the outset, and no treatment was given at any time. The purpose of such testing is uncertain. James C., a 49 year old married commercial traveller admitted to Gartnavel in September 1911, was tested six times in 1924, 1927 and 1930, and was consistently negative, yet his diagnosis was never questioned. His symptoms were defective memory, delusions of grandeur, and 'all the appearance and symptoms of GPI'.[105] No question was made of the diagnosis by the two certifying practitioners *or* the admitting physicians. Furthermore, he was in Gartnavel for over twenty years, and yet received no treatment of any sort. It may have been that the specimens were merely sent back until the laboratory 'got it right'.

Once alienists began to use the test in this manner, it was quickly realised that many patients continued to test positive well beyond the point at which standard

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[101] *Barony Parochial Asylum Case Book*, GGHB30/4/57/32.
[102] *Glasgow Royal Asylum Case Book*, GGHB13/5/140/574.
[103] *Royal Edinburgh Asylum Case Book*, LHB7/51/117/937.
[104] *Scottish Western Asylums Research Institute Annual Report*, 1929, GGHB21/2/1, p.15.
[105] *Glasgow Royal Asylum Case Book*, GGHB13/5/140/514.

treatment was stopped. It was no longer enough to remove external signs of the disease – a negative Wassermann became the definitive sign of cure. Thus in 1914, Robertson observed that:

> Our conception of the curability of syphilis has entirely changed since the Wassermann reaction has been employed to control its treatment. In the past many were unfortunately content to remove the external manifestations and call this a cure .... We know now that while the manifestations of tertiary syphilis respond wonderfully to salvarsan and mercury, it is not possible in some cases to remove the positive reaction from the blood .... Cure ... is tested, not by the disappearance of all visible manifestations of the disease, but by a permanently negative Wassermann reaction, for anything else is futile.[106]

The nature of treatment and the definition of cure were thus developed in response to the Wassermann. In 1927, 42 year old single builder Robert T. was dismissed 'improved' – 'He officially is supposed to be well but shows a certain degree of instability.'[107] One might thus query why the official result of treatment was 'well', implying recovery. The reason seems to have been because: 'His blood and cerebro-spinal fluid are both negative, and he is making a determined effort to get well.'

Testing on admission might also have been due to the perceived necessity of early treatment, on the grounds that the sooner a case was diagnosed, the sooner anti-syphilitic treatment could begin. This was at least partly a reflection of the faith being placed in new treatments like salvarsan in the early 1910s and malarial therapy in the early 1920s, provided that diagnosis was made early enough. As Grossman said: 'The early diagnosis of general paralysis is important, as the result of the treatment with tertian malarial blood, by producing fever, is very encouraging.'[108] The situation being no longer quite so bleak, due to the new treatments of the early twentieth century, alienists were positively encouraged to make the diagnosis, whether the laboratory verified that clinical judgement or not. This is well illustrated

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[106] G. Robertson, 'The Morison Lectures, 1913: General Paralysis of the Insane', *Journal of Mental Science*, 59 (1913), p.213.

[107] *Glasgow Royal Asylum Case Book*, GGHB13/5/184/458.

[108] Grossman, 'The Value of Simple Laboratory Tests', p.439.

by the practice in Gartnavel, where on a number of occasions anti-syphilitic treatment was administered before or without serological testing, further suggesting a precedence of clinical over pathological within Gartnavel, and a 'better safe than sorry' attitude.

A Boots advertisement for a brand of arsenical in 1925 took the new stamp of laboratory authority for granted: 'Approved by the Ministry of Health. Stabilarsan has a more permanent effect upon the Wassermann reaction ... than any other arsenical'.[109] The Wassermann test was becoming central to a new definition of 'cure'. No longer simply the disappearance of clinical symptoms, recovery now required a convincing period of negative testing, or as an Edinburgh M.D. thesis of this period put it, 'a clinical and serological recovery'.[110] With this new measure of cure, the clinician could confine someone until he felt he had what he considered to be definitive evidence of cure - one or more negative Wassermanns. However, this reinforced the power of the clinician rather than the serologist. Persistent negative results were needed because the laboratory sometimes got it wrong, and it was the judgement of the clinician which decided when the laboratory's results were valid. In this way, the alienist ultimately kept control of the definition of 'cured', a position made all the more powerful by the fact that the test was so problematic and its results contradictory.

Conclusion

As Jacyna notes in his influential study of the impact of pathology upon surgery in the Glasgow Western Infirmary, by the end of the nineteenth century, laboratory medicine had by no means triumphed over the skepticism of clinicians in the sphere of routine diagnosis. Inspired by Jacyna's findings, I have illustrated the interface between the alienists and serologists of Edinburgh and Glasgow, and the problematic interaction between the laboratory and the clinic. The Wassermann test was

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[109] Advertisement in *British Journal of Venereal Disease*, 1:1 (1925), front inside cover.

[110] N. McLeod, 'General Paralysis of the Insane with Special Reference to its Treatment by Malaria', M.D. thesis, University of Edinburgh (1928), p.45.

portrayed as central to the scientific investigation of the insane, and as a practical tool which entered the world of everyday psychiatry it was their most potent symbol of the laboratory era. Despite their published rhetoric about the power of the Wassermann test, however, most alienists felt that their clinical skills were at best aided, not replaced, by this new serological tool. In fact, the impact of the laboratory on GPI is one that was less than clear-cut in the early-twentieth century. The four asylums strongly reflected a wider debate at the national level on the value of laboratory findings to clinical psychiatry. Cases can be found in which the laboratory was claimed to have played a crucial role in diagnosis, determining the form of treatment, and defining cure. In the majority, however, alienists ignored or contradicted the laboratory to make decisions solely upon the basis of what could be gleaned at the bedside, looking for those same physical and mental symptoms that they had looked for in the pre-Wassermann era. The Wassermann test was possibly more valuable to them as a way to advance their professional interests, enabling them publicly to present their specialty as 'scientific' by being seen to make use of laboratory-based techniques.

Chapter Six: The Treatment of Neurosyphilis

A Hopeless Disease

The published work of Julius Mickle, Medical Superintendent of Grove Hall Asylum, London and an authority on GPI, typified late-nineteenth and early-twentieth-century writing on neurosyphilis.[1] 450 pages of his *General Paralysis of the Insane* were devoted to descriptions of clinical and pathological findings, while a mere eight pages addressed therapy and hygiene.[2] This suggests that the diagnosis of GPI was something of a 'gateway to death', automatically constituting a prognosis of *incurable*. Indeed, the British author, Austin, said:

> The treatment of general paralysis is a subject which I approach reluctantly, and not without a feeling of despondence. The manifest hopelessness of the majority of cases, which have come under my notice, has induced me to regard the disease rather from a physiological than a therapeutic point of view; rather as a rich and unexplored mine of physico-psychical curiosities than as a curable malady.[3]

And more bluntly, REA Physician Superintendent Clouston called GPI the 'one absolutely hopeless disease' within the Asylum, 'which, being once recognised, the patient's doom is held to be sealed, without a chance of respite'.[4] The REA case notes, in fact, contain a heading *prognosis* from 1912 onwards, under which the neurosyphilitic cases have either 'hopeless', 'helpless', 'poor', 'bad' or nothing recorded.

However, as Clouston's successor George Robertson put it:

> For a disease that is believed to be incurable and fatal it is surprising how many remedies have been found, almost all of which have been alleged at one time or another to cure it.[5]

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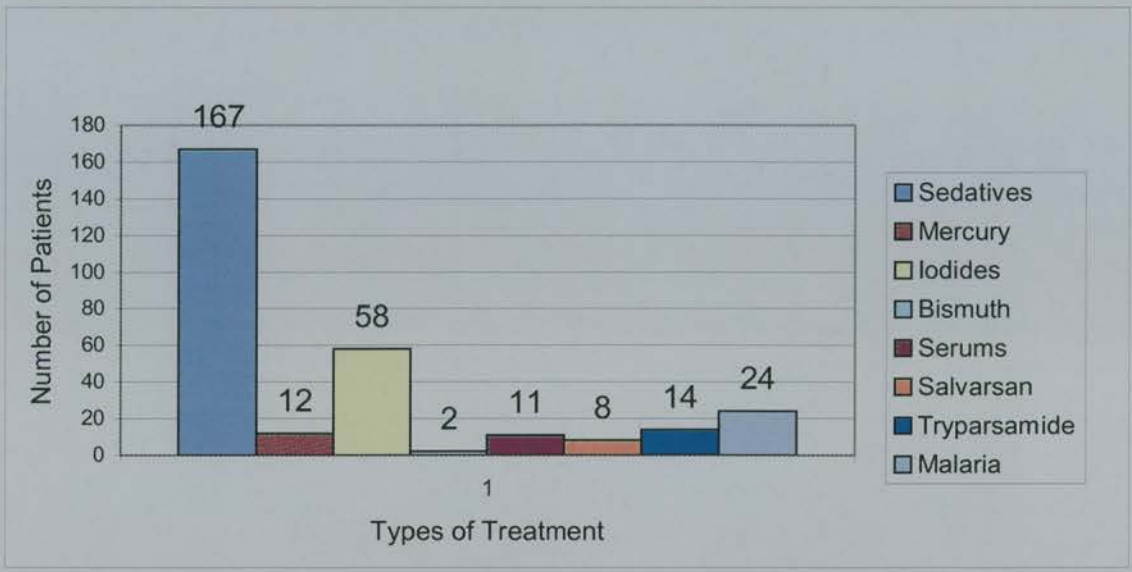
[1] J. Mickle's *General Paralysis of the Insane*, went into two editions (1880 and 1886).
[2] *Ibid.*, second edition (London, H. K. Lewis, 1886).
[3] T. Austin, *A Practical Account of General Paralysis, its Mental and Physical Symptoms, Statistics, Causes, Seat and Treatment* (London, John Churchill, 1859), p.207.
[4] *74th Royal Edinburgh Asylum Annual Report*, 1876, LHSA LHB7/7/8, p.17.
[5] G. Robertson, 'The Morison Lectures, 1913 – General Paralysis of the Insane', *Journal of Mental Science*, 59 (1913), p.216.

Figure 6.1 The Neurosyphilitic Treatments in the Four Scottish Asylums, 1880-1930



Source: *Four Asylum Case Notes*, 1880-1930, LHB7/51/34-120, LHB33/13/5-36, GGHB13/5/62-67 & 123-148, GGHB13/5/98-122 & 149-194, GGHB30/4/1-63, and GGHB30/5/1-61.

Figure 6.1 shows the various forms of therapy seen in the sample neurosyphilitic case notes of the four asylums during the period from 1880 to 1930.[6] Palliation was the mainstay of neurosyphilis therapy throughout the period, as well as a significant amount of sedation, in keeping with general asylum regimens. Traditional syphilitic remedies were also utilised – mercury and iodides – despite the dubious connection beween GPI, tabes and syphilis until the early twentieth century. By the first decades of the twentieth century, serums were being experimented with on Scottish general paralytics, although only in the REA. This period also witnessed the use of salvarsan and tryparsamide in the four asylums, though to a very small extent in the district asylums, reflecting more general trends in syphilitic treatment. Finally, the 1920s saw the introduction of malarial therapy into the four asylums.

[6] **Figure 6.1** graphs the number of patients receiving a therapy, *not* the number of times a therapy was used *per se,* since a patient might have an extensive course of, for example, tryparsamide over a period of months. Any patient receiving more than one of each therapy is counted as just one incidence of that treatment. And if a patient received more than one form of treatment, such as mercury and potassium iodide, each type of treatment is separated into the relevant categories.

In the nineteenth century, evidence suggests that antisyphilitic treatment was minimally effective. Mercury, the mainstay of therapy, was used extensively but was inadequate; with iodides later joining the armament to treat late syphilis. The discovery of arsphenamine by immunologist Paul Erhlich in 1910 led to a rapidly expanded concept of potential cure, which could now be measured by the Wassermann test. Salvarsan did little, however, for the patient with neurosyphilis. Moreover, even the best results of treatment of late syphilis were widely recognised to leave crippling or deformity. As late as 1923, Harrison, Director of the Venereal Disease Department at St. Thomas's Hospital, bemoaned that: 'We may put out the fire but we can do nothing towards rebuilding the house, and nature can do little.'[7] However a new, and rather bizarre, form of treatment proclaimed a new era in neurosyphilis therapy. The Austrian alienist Julius von Wagner-Jauregg, capitalising on the observation that malaria could alter the course of insanity, systematically inoculated general paralytics, with better results than any previous treatment. Each of these therapies was utilised within Scottish asylums. Arsenical treatment became more convenient and safer with new compounds, and yet little real progress was made until the discovery of penicillin in 1943.

My main aims in this chapter are to chart the history of the many therapies available for neurosyphilis in this period, and to explore the ways in which alienists implemented those remedies. This will also involve, to an extent, the case notes being compared and contrasted with the published literature. Efficacy will not be measured retrospectively, but only in terms of how physicians of the period conceived it. Although I will provide a comprehensive overview of all the main therapies utilised in Scottish asylums for neurosyphilis, I will then concentrate on malarial therapy. Although **Figure 6.1** shows this form of treatment to be numerically fairly small in my samples, it must be remembered that it was not introduced to the Scottish asylums until the 1920s, and thus only applicable to the final decade of the period under study. Furthermore, this therapy, generally considered to be the only really successful neurosyphilis treatment before the 1940s, generated much interest and hope, and thus had a disproportionate amount of press

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[7] L. Harrison, 'An Address on the Treatment of Syphilis, with Special Relation to its After Manifestations', *Lancet*, 1 (1923), p.4

devoted to it, including newspaper articles, annual reports, journal articles, and M.D. theses. This bulk of literature allows a detailed consideration of the therapy.

Remissions

Before considering the efficacy of the therapeutic developments of this period, it is important to mention that an important characteristic of GPI was its tendency to produce spontaneous remissions. In the REA, William O., a 51 year old single law clerk, was admitted in January 1884. By the end of his nine month stay: 'There is now a remission of the mental symptoms of his disease, and Mr [O.] is at present rational in speech and behaviour.'[8] Similarly, for John O., a 66 year old married cashier, admitted in May 1913, 'the paretic condition is stationary at present'.[9] Elizabeth E., a 46 year old married housewife admitted to Gartnavel in July 1926, was 'seen to have improved her mentality during her stay and remained stable for a fortnight' and thus released on three months probation. While out of the asylum: 'The patient continues in her remission and is discharged while on probation.'[10] Alexander N., a 55 year old married labourer, was discharged from Rosslynlee on a 28 day pass in July 1900, 'remaining on a remission of G.P.I'.[11] It is interesting that the remissive character of GPI, though known to be only temporary, was enough in a number of cases to result in a discharge, even if only probationary.

Exactly what happened during these remissions was a matter of much interest and debate, and one that was never satisfactorily established. The most popular explanation was that the activity of the spirochaetes became lessened 'either as a result of the lack of virility on the part of the spirochaetes or due to the proliferation of immunity bodies by the host'.[12] These remissions were of three kinds.[13] In the first, there was remission of the mental and motor symptoms simultaneously; and in

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[8] *Royal Edinburgh Asylum Case Book*, LHB7/51/42/70.
[9] *Ibid.*, LHB7/51/96/305.
[10] *Glasgow Royal Asylum Case Book*, GGHB13/5/183/370.
[11] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/34/121.
[12] H. Solomon, 'General Paresis: What it is and its Therapeutic Possibilities', *American Journal of Psychiatry*, 2 (1922-3), p.630.
[13] Mickle, *General Paralysis of the Insane*, p.206.

the second, remission pertained to the mental symptoms only, or chiefly. These were the most frequent types of remission. Clear examples of the third variety were comparatively infrequent - remission of the motor symptoms alone, the mental remaining without improvement. It was asserted by the french physician Baillarger that remissions were most frequent when the disease began with a maniacal attack.

When the remission ended and the disease resumed its course, it might be ushered in by an apoplectiform or epileptiform seizure. As Mickle poetically puts it, it was 'as if the disease had silently gathered force until "discharge" with explosive violence took place'.[14] The disease might otherwise commence with emotional and depressed ideas; maniacal restlessness and expansive symptoms; or with increasing dementia. Remissions did not seem to have a typical length, quite commonly lasting several weeks or several months. However, it was suggested by some that longer remissions were experienced by those patients receiving treatment of some sort. The American alienist, Solomon, stated that remissions of one to three years duration were very frequent in patients who had received treatment, occurring at least five times as often in the treated than in the untreated group, and lasting much longer.[15] However, spontaneous remissions and improvement also occurred without treatment of any sort.

Non-Specific Therapies

Throughout the nineteenth century, treatments were practically confined to alleviating symptoms. After all, despite the prognosis, physicians could not be seen to do nothing except merely 'contemplate death':

> Physicians, like men in a boat about to be swept over a fall, paralysed with despair, make no effort. Utter failure in our professional work, as in our lives, is sad enough, but failure with no effort to avert it is abhorrent to our nature.[16]

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[14] *Ibid.*
[15] Solomon, 'General Paresis', p.640.
[16] W. Godding, 'Active Treatment of General Paralysis of the Insane', *British Medical Journal*, 2 (1897), p.1407.

The patient was to be removed from employment at once and placed under the constant supervision of a relative or valet, if treated at home or in a private house. If unsafe or certifiable, it was best for him to be placed at once under suitable hospital or asylum care. In fact, Barker, an alienist based in both England and Australia, felt that, in any case of GPI, 'the first and only justifiable step is removal to an asylum'.[17] Complete rest was considered absolutely necessary 'and a general paralytic ought never to be sent travelling on the Continent'.[18] The quieter the patient was kept, the more slowly, it was claimed, would the disease develop, and the less likelihood of acute excitement supervening. On the other hand, gentle exercise, possibly out-of-doors, was recommended where the patient could manage. However, as Craig, a physician and lecturer in psychological medicine in London, pointed out:

> Moderate exercise … is by no means easy to carry out, as the patient is usually restless and full of energy and will not be satisfied with less than twenty miles a day or many hours of golf or other games.[19]

It should be pointed out, however, that many of the Scottish patients were already too advanced in the disease, once institutionalised, to be able to exercise or work.

Good nursing amid suitable surroundings was seen to be essential. Great care was to be exercised in handling a general paralytic, 'as he not only bruises readily, but his bones are very brittle'.[20] The Annual Reports of Gartnavel throughout the 1920s are full of references to the caring nature of the Institution, backed up by the reports of the Commissioners. Commissioner Sturrock, of the Board of Control, reported: 'The nursing care is of an excellent description. The staff generally give the impression of being alert, kindly and well-trained.'[21] One of the commonest concerns in the care of paralytics was the prevention of bed-sores. This was achieved by taking great care to keep the patient clean by changing soiled clothes and daily ablutions. Still, in spite of the care of skilled nurses and attendants,

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[17] W. Barker, *Mental Diseases: A Manual for Students* (London, Cassell, 1902), p.108.
[18] M. Craig, *Psychological Medicine: A Manual on Mental Diseases for Practitioners and Students* (J. and A. Churchill, London, 1917), p.252.
[19] *Ibid.*
[20] *Ibid.*, p.253.
[21] *113th Glasgow Royal Asylum Annual Report*, 1926, GGHB13B/2/224, p.54.

bed-sores often arose on parts subjected to pressure. In the bedridden and final stage a water or air bed was the ideal. The case notes of James F. of Rosslynlee, a 32 year old single miner admitted in March 1896, record that he: 'Has some very bad bedsores, in spite of' the use of a water bed.[22]

The bowels required careful attention and continual care. Retention of urine was a common symptom, as was constipation. The most useful medicine for constipation was a dose of castor oil, to be repeated as occasion demanded. Robert S., a 37 year old married quarryman admitted in August 1889, had his bowels moved with Croton Oil.[23] William D., a 32 year old single labourer admitted in April 1904, was very constipated, and thus had an enema and castor oil.[24] John I., 42 years old and admitted in December 1906, was: 'Much less restless since his bowels were thoroughly evacuated.'[25] Alexander D. of Gartnavel, a 40 year old married store owner admitted in October 1896, was a large eater and required 'laxative medicines'.[26] James S. of the REA, a 36 year old widowed mattressmaker admitted in December 1882, had his 'Bowels moved well by a hotwater enema.'[27] Diarrhoea was an occasional complication of the last stage of GPI. Antacids, chalk, and aromatics were considered useful against it. Dilute sulphuric acid, in half drachm doses, sometimes checked it. Also, half a grain of the sulphate and an equal dose of powdered opium, given every four hours, would usually remedy any diarrhoea that might occur in the course of GPI.[28]

Finally, great care was to be taken to see that demented patients or patients suffering from seizures did not have a full bladder. Where necessary a sterilised catheter was to be passed. As British alienist Mott cautioned: 'This warning seems hardly necessary, but I have seen a demented paralytic fall out of bed in a seizure and rupture his distended bladder.'[29] In the four asylums, a catheter was frequently made use of for neurosyphilitic patients. In Woodilee, Robert O., a 49 year old married iron moulder admitted in February 1898: 'Require[d] catheterisation every day'

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[22] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/14/133.
[23] *Ibid.*, LHB33/13/9/467.
[24] *Ibid.*, LHB33/13/19/389.
[25] *Ibid.*, LHB33/13/21/529.
[26] *Glasgow Royal Asylum Case Book*, GGHB13/5/130/438.
[27] *Royal Edinburgh Asylum Case Book*, LHB7/51/40/166.
[28] Austin, *On General Paralysis*, p.222.

because his bladder was fully distended.[30] William F. of Rosslynlee, a 38 year old married labourer admitted in February 1900, had his catheter treatment described in more detail:

> This morning it was found that his bladder was distended, and he was unable to pass his water, so reporter passed a no.9 rubber catheter, and drew off nearly a chamber full of urine. No difficulty was experienced in passing the catheter. Is now passing his water all right, but has gone off his food, says it is filth.[31]

The decades after 1850 saw an increased emphasis on diet and regimen among physicians, including a vogue for using alcoholic beverages as stimulants. Clouston, in particular, saw diet and 'the gospel of fatness' as important to the treatment of insanity. As his 1881 Annual Report stated:

> All acute mental diseases, like most nervous diseases, tend to thinness of body, and therefore all foods, and all medicines, and all treatment that fatten, are good. To my assistants, and nurses, and patients, I preach the gospel of fatness as the great antidote to the exhausting tendencies of the disease we have to treat, and it would be well if all people of nervous constitution would obey this gospel. It would often prevent them coming here at all .... I always have more confidence in the permanence of the recovery of a patient who fattens well up during convalescence.[32]

For Clouston, a combination of milk and eggs 'in the shape of liquid custards' was to be frequently given 'when everything else was refused'.[33] In 1892, John A. of Rosslynlee, a 40 year old married dairyman/farmservant, 'takes very little food' and 'is now on custards'.[34] In 1902, Margaret D., a 31 year old married housewife, was placed on a special diet 'consisting of eggs, brandy, milk and bread. Tends to take form of: 4 Eggs, 3ozs Brandy, 2.5 Pints of Milk, Milk diet for dinner, Bread and Milk at 7pm'.[35] Alexander U. of Gartnavel, a 40 year old married coal salesman

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[29] F. Mott, 'General Paralysis of the Insane', in D. Power and J. Murphy (eds), *A System of Syphilis*, volume four (London, Oxford University Press, 1910), p.290.
[30] *Barony Parochial Asylum Case Book*, GGHB30/4/4/302.
[31] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/16/249.
[32] *79th Royal Edinburgh Asylum Annual Report*, 1881, LHB7/7/8, p.18.
[33] T. Clouston, *Unsoundness of Mind* (London, Methuen, 1911), p.303.
[34] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/10/73.
[35] *Ibid.*, LHB33/13/17/401.

admitted in July 1898, was 'not looking well' and 'has been ordered extras'.[36] James M., a 45 year old married spirit merchant admitted in September 1902, 'was lately found to have lost considerably in weight so at present he is being kept in bed and is getting plenty of food'.[37] In 1905, Susan J. of Woodilee, a 40 year old married domestic, was put onto a milk diet because of her sickness and vomiting.[38]

It was at the REA that 'feeding up' was utilised most. Mary N. and Jane Z. needed an extra nourishing diet due to their thin state. Robert U., William F., John F., Alexander N. and James V. were put on extra custards, or two custards daily. Robert U., a 41 year old married physician admitted in August 1897, received a 'Liquid diet mild and eggs and a gregory meantime'on admission, Gregory's mixture consisting of a compound powder of rhubarb.[39] Notably, as with the three other institutions, such food treatments ended *circa* 1905, with none being prescribed after Robertson took over from Clouston as REA Physician Superintendent in 1907. The 'gospel of food' regimen was specifically Clouston's, although why the other institutions also ended this form of treatment around the same time is unclear.

Careful dieting and feeding were necessary 'owing to the liability of general paralytics to choke, both on account of their greediness and of the defective powers of deglutition'.[40] 49-year-old William E. of Rosslynlee had 'to be hand fed, getting good fluid nourishment' due to his difficulty in swallowing.[41] Elizabeth O., a 55 year old married housewife admitted in January 1924, had to be fed rectally because she was hardly able to swallow.[42] However, even more patients had to be force fed – at Gartnavel, John U., a 36 year old married clerk admitted in July 1918, had to be tube fed 'as he refused to swallow, there was no obstruction or difficulty in passing the tube'.[43] Similarly, at Rosslynlee, Alexander I., a 63 year old married housepainter admitted in May 1888, had to be forceably fed because he refused food.[44] James I., a 40 year old widowed 'low life' (his occupational label in the case

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[36] *Glasgow Royal Asylum Case Book*, GGHB13/5/132/149.
[37] *Ibid.*, GGHB13/5/134/319.
[38] *Barony Parochial Asylum Case Book*, GGHB30/5/12/36.
[39] *Royal Edinburgh Asylum Case Book*, LHB7/51/7/209.
[40] Barker, *Mental Diseases*, p.108.
[41] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/33/121.
[42] *Ibid.*, LHB33/13/26/20.
[43] *Glasgow Royal Asylum Case Book*, GGHB13/5/145/479.
[44] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/9/33.

notes) admitted in August 1927: 'Has good nourishment by being forcibly fed'.[45] Robert D. of Gartnavel, a 39 year old married civil engineer admitted in July 1918, was: 'Delusional - says the food is poisoned and has had to have it forced a little with the spoon'.[46]

Craig stated categorically that all alcohol was forbidden for general paralytics.[47] However, at Rosslynlee, William A., a 40 year old single dairyman/farmservant admitted in December 1889, was given brandy because he was very weak and restless.[48] John R., a 48 year old married labourer admitted in August 1891, got wine 'as his strength is failing', followed four months later by brandy four or five times a day 'but he often spits it up'.[49] Interestingly, both of these patients were admitted with a diagnosis of melancholia rather than neurosyphilis, so that this might still be compatible with the 'alcohol forbidden' rule. However, Alexander U. of Woodilee, a 52 year old single labourer admitted in July 1907, received whisky daily due to: 'Dyspnoea with a feeble irregular pulse.'[50] At Gartnavel, James J. a 42 year old married draper admitted in June 1891, received 'two glasses of whisky by day and night' because 'he is sinking pretty rapidly'.[51] And finally, Robert U. of the REA, a 32 year old married commercial traveller admitted in July 1887, had: 'Pulse weak and irregular, respiration feeble and was given brandy'.[52] The use of alcohol as a stimulant was fairly widespread in this period.

Another prominent physical symptom associated with GPI requiring treatment was extreme restlessness. When there was insomnia, hypnotics were to be given, while general restlessness required sedation:

> There is nothing that calls for greater tact than having to regulate the exuberant spirits of the general paralytic in the early stages. With physical fatigue, every symptom from which he suffers will become exaggerated.[53]

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[45] *Ibid.*, LHB33/13/35/37.
[46] *Glasgow Royal Asylum Case Book*, GGHB13/5/145/459.
[47] Craig, *Psychological Medicine*, p.253.
[48] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/10/73.
[49] *Ibid.*, LHB33/13/11/84.
[50] *Barony Parochial Asylum Case Book*, GGHB30/4/18/111.
[51] *Glasgow Royal Asylum Case Book*, GGHB13/5/126/408.
[52] *Royal Edinburgh Asylum Case Book*, LHB7/51/43/633.
[53] Craig, *Psychological Medicine*, p.252.

Asylum physicians had recourse to numerous drugs with which to calm and sedate their patients. Those developed in the nineteenth century included bromides, chloral hydrate, hyoscine, paraldehyde, sulfonal, and narcotics. Popular in the Scottish asylums, chloral promoted a deep sleep at the beginning of the night, with no toxic effects and no next-day effects. Clouston's drug of choice was paraldehyde:

> The drug I have used most extensively for the past two years, and like far better than any other pure hypnotic I have ever tried, is paraldehyde. This is so valuable, so reliable, and so free from risks near or remote, that I think it cannot be too widely known by the profession.[54]

On the other hand, he believed that sulphonal could not 'be said to be perfectly and always satisfactory, or even safe'.[55] Sulphonal was generally believed to be slower in action, and left dullness the next day. In fact, the continuous employment of sulphonal was believed to be injurious, aggravating the disease by its pernicious influence on the blood. Calomel was also used for GPI restlessness, as in the treatment of mania, although more rarely. As Austin gloomily summarised:

> To calm intense paralytic excitement by [sedation], and to support by a generous but unstimulating diet a body exhausted by sleeplessness, by frightful or exalted fancies, constitutes nearly the whole of the palliative treatment.[56]

The most common methods of sedation at the four asylums were a combination of paraldehyde, sulphonal and chloral, although sedatives were often simply referred to as 'draughts'. 35 Rosslynlee patients (19%) received some form of sedation during their stay between 1880 and 1930. William E., a 49-year-old patient admitted in January 1924, required sedation:

> While in bed patient had a violent outburst of excitement, raving incoherently and struggling. He was with difficulty controlled - and

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[54] T. Clouston, 'On the Use of Hypnotics, Sedatives, and Motor Depressants in the Treatment of Mental Diseases', 1889, LHSA GD16, p.4.
[55] T. Clouston, 'Sulphonal – Its Advantages and Disadvantages', 1895, LHSA GD16, p.481.
[56] Austin, *On General Paralysis*, p.208.

> after a dose of paraldehyde which he took under the impression that it was alcohol he went asleep.[57]

26 Woodilee neurosyphilitics (12%) required sedation, and 64 at Gartnavel (40%). John U., a 45 year old married hotel keeper admitted in March 1900, was: 'Very restless and refusing to lie in bed' so that a draught was administered 'with some difficulty ... which soon put him to sleep'.[58] Alexander I., a 37 year old married warehouseman admitted in September 1894: 'For the last four or five days ... has had small doses of sulphonal, with marked beneficial effect. It has subdued the excitement and made him more tolerable to live with'.[59] James E., a 39 year old married mine manager admitted in March 1919, was: 'Noisy, excited and destructive. Nearly every night he has to receive an hypnotic of some kind or another.'[60] 42 REA patients (12%) received some form of sedation. Margaret I., a 39 year old married housewife admitted in October 1905, required sedation to 'subdue her dangerous excitement'.[61]

Mercury

Mercury had in the past been used as an ointment for diseases characterised by skin eruptions such as leprosy and scabies. First used on syphilis in 1497, the popularity of mercurial treatment waxed and waned during the seventeenth, eighteenth, and early nineteenth centuries largely because of the dire effects of the heroic dosages customarily administered.[62] However, by the eighteenth century, mercury had become the linchpin of syphilis treatment for all but a few venereologists. In fact, mercury enjoyed an extraordinary vogue in early nineteenth-century therapeutics. It was believed to control the fluids of the body, and its accessibility made it the most

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[57] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/33/121.
[58] *Barony Parochial Asylum Case Book*, GGHB30/4/6/21.
[59] *Glasgow Royal Asylum Case Book*, GGHB13/5/129/96.
[60] *Ibid.*, GGHB13/5/146/269.
[61] *Royal Edinburgh Asylum Case Book*, LHB7/51/88/33.
[62] If employed for a sufficient length of time and in sufficient quantity, mercury induced a series of progressively severe and cumulative physiological effects: first, diarrhoea, and ultimately, full-blown symptoms of mercury poisoning.

powerful drug of its time. The eager usage of mercury in prescriptions provoked visible symptoms, with Rosenberg choosing to call this an 'heroic medicine', since the consequences of mercury made the physicians appear more pro-active.

Mercury treatment appeared to give desired results because physicians and patients wanted the sores and eruptions to clear up, and with mercury they did. The copious involuntary salivation induced by mercury was seen as further proof that the drug was exerting an 'alternative' effect – that is, altering the fundamental balance of forces and substances which constituted the body's ultimate reality.[63] Though other drugs, most prominently arsenic and iodine, were believed able to exert such an effect, mercury seemed particularly useful because of the seemingly unequivocal relationship between varying dosage levels and its consequent action. Mercury was, in this sense, the physician's most flexible and powerful weapon for treating ailments in which active intervention might mean the difference between life and death.[64]

Many believed mercury to be genuinely effective, but since the days of Ulrich von Hutten in the sixteenth century, there had always been a vocal minority who insisted that it was useless. At best, mercury relieved some of the symptoms of syphilis and left the infection 'simmering … so that the disease was constantly progressing towards the stage of tertiary manifestations'.[65] At worst, mercury treatment greatly aggravated the destructive effects of syphilis. In fact, it could not be clear 'which of the … symptoms of treated patients were due to syphilis and which to mercury intoxication'.[66] After all, mercury was a poison guaranteed to disturb the human metabolism, often producing side-effects ranging from nausea and pain, to disorders of the skin, colon, and kidneys. Prolonged exposure to mercury could produce mental and neurological disturbances, and at any time an overdose could kill. In fact, the estimated 'curative' dose was perilously close to the 'lethal' dose.[67] At times the 'cure' thus became indistinguishable from the disease. Even then, given the recognised dangers of syphilis, these effects were often favourably

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[63] M. Vogel and C. Rosenberg, *The Therapeutic Revolution* (Philadelphia, University of Pennsylvania Press, 1979), p.9.
[64] *Ibid.*
[65] J. Walkowitz, *Prostitution and Victorian Society: Women, Class and the State* (Cambridge, Cambridge University Press, 1980), p.53.
[66] *Ibid.*
[67] *Ibid.*

portrayed and typically accepted as necessary to combat the disease. And, indeed, smaller doses that did not bring on these effects were often deemed inadequate by both patient and healer.

By the nineteenth century the majority of venereologists accepted that 'under proper management mercury may be considered as a certain remedy for syphilis',[68] but looked for improvements in its administration. Doctors were understandably anxious to improve the results achieved with mercury. Many different methods of administering it were developed, and each had its adherents. The most widely used approach was to have the patient take mercury by mouth. A bewildering diversity of preparations appeared. Mercurous chloride was the most popular active ingredient. Dissolved in syrup it was called calomel; mixed with other powders, grease, and conserve of roses, it became the 'blue pill'.[69] Inunction was often preferred, gaining popularity as the century passed: patients rubbed mercury into patches of their skin. This procedure took about half an hour, at the end of which the skin into which the ointment had been rubbed took on a blue-grey sheen.

If mercury was so ineffective in syphilitic infection, why did it remain the most popular remedy for centuries? Brandt asserts that mercury held favour regardless of a particular physician's theoretical perspective.[70] Although there was considerable debate about the mechanism of mercury's cure, there nevertheless was broad consensus that with the salivation and sweat induced by the drug, the poison was expelled from the body. Many physicians contended that the heavy metal would rid the body of the poison causing disease. Applied topically, orally, and through fumigation, mercury caused profuse sweating and copious salivation, all perceived as excellent means for purging the pox 'virus'. Furthermore, the punitive nature of mercury treatment reconciled therapy with moral norms regarding the causes of syphilis. Chapter seven will elaborate on how notions of morality entered medicine. Finally, with the premise that serious disease required serious treatment, mercury certainly met the criteria. Established wisdom was summarised by French virologist

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[68] J. Oriel, *The Scars of Venus: A History of Venereology* (London, Springer-Verlag, 1994), p.86.
[69] J. Cassel, *The Secret Plague: Venereal Disease in Canada, 1838-1939* (Toronto, Buffalo and London, University of Toronto Press, 1987), p.52.
[70] A. Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States since 1880* (New York and Oxford, Oxford University Press, 1985), p.565.

Philippe Ricord, who said that it was possible to cure syphilis only as long as the patient had the courage to go through with the treatment and the doctor had the courage to treat the disease properly.[71]

As a therapeutic agent, mercury was also used extensively in the treatment of insanity long before GPI was recognised as a disease, much less associated with syphilis. Benjamin Rush claimed that it acted 'by abstracting morbid excitement from the brain to the mouth', and became used against GPI even though the disorder's syphilitic origins were not suspected.[72] Ironically, mercury's ineffectiveness was actually used as an argument *against* the syphilitic origin of GPI for a time. After all, if GPI was caused by syphilitic infection, surely mercury, the drug of choice for treating syphilis, would also cure GPI.

During the period from 1880 to 1930, there is no record of Rosslynlee physicians giving mercury to neurosyphilitic patients, while Woodilee used it for only one general paralytic, and the REA for only three. Robert I., a 30 year old single engineer, received mercury and potassium iodide treatment on 4 November 1889. He died in 1916, having been resident in the asylum for 27 years, yet received no subsequent treatment except 'urinary antiseptics, passing fluid and mild stimulants'.[73] Susan U., a 24 year old single barmaid, was admitted in January 1899 with acute mania/syphilitic insanity. The physicians felt that the cause of her disorder: 'If not alcoholic, may be syphilis. She will thus be given a course of' mercury and potassium iodide, which she received one week after admission. She was discharged recovered on 1 March 1899.[74] William O., a 39 year old married labourer, had mercury and potassium iodide administered on the same day, 20 March 1922. However, the treatment was unsuccessful, the patient dying on 24 June 1923.[75] Finally, John N., a 41 year old single architect, was treated with mercury and potassium iodide on 18 January 1922, with: 'Marked improvement taken place under anti-syphilitic treatment'. He was discharged recovered on 23 February 1923. However there is also a note that he:

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[71] Cassel, *The Secret Plague*, p.51.
[72] G. Zilboorg and W. Henry, *A History of Medical Psychology* (New York, Norton, 1941), p.548.
[73] *Royal Edinburgh Asylum Case Book*, LHB7/51/6/63.
[74] *Ibid.*, LHB7/51/74/9.
[75] *Barony Parochial Asylum Case Book*, GGHB30/4/52/64.

> was examined some time ago by Dr John Macpherson who definitely diagnosed GPI, but the diagnosis is now doubtful owing to the marked improvement which has taken place under anti-syphilitic treatment.[76]

The fact that this therapy actually seemed to work was grounds for questioning the GPI diagnosis.

Mercury proved a little more popular at Gartnavel, physicians treating nine (6%) neurosyphilitics in this manner. Alexander D., a 46 year old single manager of a silk manufacturing business, received mercurial ointment in July 1903 and again in March 1904. He died on 18 January 1906.[77] James A., a 41 year old married custom house officer, similarly received a mercury inunction on 5 January 1915. That and potassium iodide were tried 'but without any mental improvement'. He was thus transferred 'not improved' to Riccartsbar Asylum on 27 February 1915.[78] Robert O., a 40 year old married marine engineer, was under inunctions of mercury during December 1919. He was transferred to Fulton Asylum, Yorkshire in May 1920, his wife living in England.[79] William O., a 45 year old married grain weigher, was put given mercurial inunctions in August 1922 because he was found to be 'Wassermann positive'. He died in November 1925.[80] Mary S., a 44 year old married housewife, received both mercurial inunctions and potassium iodide in August 1923. She died in June 1926.[81] Jane S., a 39 year old married housewife, received malaria and quinine, followed by a mercury inunction in January 1931. She died the following month.[82]

The Iodides

During most of the nineteenth century, the importance of iodides for the treatment of syphilis was second only to that of mercury. In fact, iodide of potassium was

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[76] *Royal Edinburgh Asylum Case Book*, LHB7/51/108/505.
[77] *Glasgow Royal Asylum Case Book*, GGHB13/5/134/425.
[78] *Ibid.*, GGHB13/5/142/580.
[79] *Ibid.*, GGHB13/5/147/19.
[80] *Ibid.*, GGHB13/5/182/295.
[81] *Ibid.*, GGHB13/5/183/354.
[82] *Ibid.*, GGHB13/5/190/839.

referred to as 'the therapeutic magician' which was able to conquer syphilis in any of its stages.[83] The iodides were usually prescribed as iodide of potassium, sodium or ammonium, or as a combination of all three. Iodine was discovered in 1811 by a French chemist, Bernard Courtois, while potassium iodide was introduced by Charles Coindet of Geneva in 1820. However, it gained general acceptance only as a result of the work of William Wallace of Dublin during the early 1830s. He first investigated the kinetics of iodine and iodides in dogs. Then, in a series of experiments which began in 1832, he showed that after oral administration, iodides were present in many body fluids, including the milk of nursing mothers. In 1836, he described the successful treatment of 139 cases of post-primary syphilis, and his results were soon confirmed by others.[84] Thereafter, it gained widespread acceptance in conjunction with mercury for treating secondary and tertiary syphilis.

Thus, by 1880, physicians considered themselves to:

> have arrived at a period in the history of the treatment of syphilis when it has been conveniently settled that mercury plays its part in the primary stage of this disease, and iodide of potassium in the later stages.[85]

The iodides were not, as a general rule, to be used for more than fourteen consecutive days, after which an interval of one week was to be allowed. There were further considerations:

> In order that iodide of potassium may be well tolerated, and productive of benefit, the tongue must be clean, the appetite good, and the nutritive and assimilative processes in fair working order. If this is not the case, means must be taken to render them so.[86]

Despite their side effects, mostly coryza and skin rashes, iodides retained their place in the treatment of late syphilis, and in combination with mercury, arsenicals or penicillin were used well into the twentieth century. However, the London physician

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[83] T. Dowse, *The Brain and its Diseases, Volume 1: Syphilis of the Brain and Spinal Cord* (London, Bailliere, Tindall and Cox, 1879), p.58.
[84] Oriel, *The Scars of Venus*, p.87.
[85] Dowse, *The Brain and its Diseases*, p.57.
[86] *Ibid.*, p.58.

Dowse, for one, reluctantly admitted that this drug did not possess in his hands 'that illimitable potency which many have ascribed to it'.[87]

The iodides were given more frequently to Scottish asylum patients than mercury, and usually in the form of potassium iodide. The first of the 33 REA patients to be treated with iodide in this period was Elizabeth O., a 39 year old single slipper maker, in July 1880, a month after her admission.[88] This treatment was used until 1922 on my sample of REA neurosyphilitics. Fifteen neurosyphilitics received iodide treatment in Gartnavel, the first in this period being John E., a 42 year old single clerk, admitted in March 1887, and the treatment being utilised beyond 1930.[89] Alexander E.: 'Admits to having had gonorrhoea some years ago but there is no evidence of syphilis.' He was however put on potassium iodide. James H., a 53 year old married mason admitted in July 1897, had an ulcer on his leg which 'looks very suspicious of syphilis but no other evidence can be obtained of this'. However, no chances were taken, and the patient was treated with potassium iodide.[90] About half of these iodide-treated patients received it in conjunction with mercury.

In Woodilee, only three neurosyphilitics of 210 received iodides, while in Rosslynlee seven patients of 181 received this form of treatment. The first Woodilee patient to receive iodide was Robert E., a 32 year old married mason admitted in April 1889. The following month, he was prescribed 5grs of potassium iodide thrice daily 'in view of his syphilitic condition'.[91] William F., a 37 year old married boilermaker admitted in March 1911, 'cannot voluntarily raise the right eyelid' and so was put on potassium iodide. However: 'As the Pot Iodid had no apparent effect on the eye condition it was stopped a week ago.'[92] The first to receive iodide in Rosslynlee was John O., a 49 year old single labourer, in August 1895.[93] This treatment was then given in the Asylum throughout the first three decades of the twentieth century, usually three times daily, and usually combined with some form of sedation. All patients to receive it were male paupers, five of whom received the

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[87] *Ibid.*
[88] *Royal Edinburgh Asylum Case Book*, LHB7/51/5/168.
[89] *Glasgow Royal Asylum Case Book*, GGHB13/5/124/525.
[90] *Ibid.*, GGHB13/5/131/248.
[91] *Barony Parochial Asylum Case Book*, GGHB30/4/2/365.
[92] *Ibid.*, GGHB30/4/29/29.
[93] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/13/425.

treatment just after their admission. The case of Alexander F., a 32 year old single miner admitted in March 1896, gives an indication of some of the effects potassium iodide (KI) was thought to have: 'The KI seems to have had little or no effect in relieving the asymmetry of his face' and later 'but his speech +c remains unchanged'.[94]

Bismuth

Due to the obvious disadvantages of mercury in tertiary syphilis, the search was ongoing for a replacement. Numerous compounds were marketed throughout the 1880s - at one time there was a choice of 113 - but eventually intramuscular injections of metallic bismuth or one of its insoluble salts were favoured. Various compounds containing bismuth were first tried in the treatment of syphilis in 1889, but at that time they were abandoned. Attention returned to them in 1916, but it was only in 1921 that bismuth was introduced by two Parisian physicians, Sazerac and Levaditi, when experiments in humans were undertaken.[95] Bismuth soon became an accepted adjunct to arsenical treatment, and within a short time had replaced mercury in many quarters. Soon confidence in bismuth compounds was such that they also largely replaced potassium iodide in the treatment of tertiary gummas.

Clinically there was a mass of evidence to show that bismuth favourably influenced the course of syphilis in all its stages. In fact, the drug was believed to have a special reputation in the treatment of neurosyphilis, Levaditi recording an amelioration of symptoms in tabes and GPI, 'possibly because many of these cases have become resistant to treatment by the arylarsonates'.[96] Once again, however, the same types of results were recorded – some remission of symptoms, modifications in the laboratory findings, but no hint of an unmistakeably curative agent having been found. It would appear that bismuth, like the many forms of treatment already

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[94] *Ibid.*, LHB33/13/14/133.
[95] Cassel, *The Secret Plague*, p.57.
[96] E. Duff, 'Modern Conceptions in Syphilology with Special Reference to Serological Diagnosis and Treatment by the Arylarsonates and Bismuth', M.D. thesis, University of Edinburgh (1935), p.103.

mentioned, was to be relied upon 'more as a therapeutic ally than as a specific cure' for GPI.[97]

Bismuth was very rarely documented in the Scottish asylum case notes for neurosyphilis. No patient in Rosslynlee or Gartnavel received such a treatment, while only one patient in both Woodilee and the REA received bismuth. On 2 November 1905, Margaret J., a 40 year old married domestic admitted in September 1905, received some form of bismuth treatment, in addition to being put onto a milk diet for dyspepsia and vomiting. Having been resident in the asylum for 44 days in total, she died ten days after the treatment.[98] Susan O., a 44 year old married housewife, received bismuth injections following a course of two intramuscular injections of malaria and then 12 grams of tryparsamide. Admitted on 16 April 1928, she was discharged relieved on 2 March 1930.[99]

Surgery

In the spring of 1889, Batty Tuke[100] and Claye Shaw, [101] independently of each other, performed the operation of trephining on general paralytics, to overcome cerebral congestion. This was in response to Shaw's belief that one of the most prominent causes of the demented state that general paralytics often presented in the early stage was pressure. This, it was argued, if long continued, must cause atrophy of the cells followed by effusion of fluid.[102] Tuke concluded:

> We are all witnesses to the relief afforded by depletion, such as strong purgatives; and I have little doubt that the loss of blood following the large incision that is advisable in operations for trephining is in itself a source of relief. Why not, then, in this early stage, before pressure

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[97] N. Macleod, 'General Paralysis of the Insane with Special Reference to its Treatment by Malaria', M.D. thesis, University of Edinburgh (1928), p.21.
[98] *Barony Parochial Asylum Case Book*, GGHB30/5/12/36.
[99] *Royal Edinburgh Asylum Case Book*, LHB7/51/117/937.
[100] Owner of a private asylum in Edinburgh and an extra-mural lecturer in succession to Skae.
[101] Lecturer in Psychological Medicine, St. Bartholomew's Hospital.
[102] T. Claye Shaw, 'Surgical Treatment of General Paralysis of the Insane', *British Medical Journal*, 2 (1891), p.583.

> has had time to cause destruction, provide a means more directly than can be done by any other method, of returning it?[103]

The propriety of surgical interference in GPI was said to rest on general and special grounds – general, in relieving pressure and draining off the fluid that had accumulated; and special, 'in the hope that it will afford a new system of nutrition for the brain, and another channel for the elimination of waste products'.[104]

Given the feeling of hopelessness that physicians experienced in the treatment of neurosyphilis, any means of relieving some of the symptoms was deemed worthy of consideration and trial. Trephining was considered to be 'a safe operation in skilful hands' which did 'not subject the patient to unfair risk, and that even in its present state [could] be shown to have conferred advantages'.[105] However, Shaw had some difficulty in persuading others to follow his lead, and to allow 'surgical interference' to 'be admitted within the circle of allowable remedies'.[106] He wished to stress that, in embarking upon this operation, he shared the opinion of more than one eminent neurologist. By 1895, John MacPherson, Senior Assistant Physician at the REA, was claiming that cerebral surgery had become as thoroughly established as surgery of the abdomen had been during the previous decade.[107] Significantly, it was around GPI that the chief interest of the surgical treatment of insanity centred.

Scotland witnessed a certain amount of experimentation in this technique. As mentioned above, Batty Tuke and Shaw performed the operation of trephining for the relief of GPI in Edinburgh and Stirling respectively. Of Batty Tuke's three cases,[108] the first had two trephine openings made, one on each side of the head a little above and in front of the parietal eminence. For five days after the operation, there was a marked change in the mental condition of the patient. His mind was clear, his manner calm. Hallucinations from which he had previously suffered disappeared, as did his severe headache. However, the improvement was not

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[103] *Ibid.*
[104] *Ibid.*, p.581.
[105] *Ibid.*, p.582.
[106] *Ibid.*, p.583.
[107] J. MacPherson, 'Surgical Treatment of Insanity', 1895, LHSA GD16, p.495.
[108] *Ibid.*, p.524.

permanent, and the disease resumed its progressive march. The second patient saw his old symptoms return immediately after the closing of the wounds, and he died of GPI several months afterwards. Case three had a double trephine opening made in the Rolandic area. There was a distinct layer of fluid felt under the pia arachnoid membranes, which were opened and a small drainage tube inserted. The wound, however, healed in five days, and could not be kept open longer. On the second day after the operation, the pupils were equal, and the headache had disappeared. Three weeks after the operation, the patient felt well, with no headache, a steady walk, and no tremulousness in speech. He left the Royal Edinburgh Infirmary (where all three operations were performed) on the fortieth day after the operation, completely cured. He remained well for three months, but gave way ultimately to drink, and died in delirium tremens from exhaustion.

Shaw's cases met with similar results.[109] Case one had the dura mater opened, and a considerable quantity of cerebro-spinal fluid escaped. Four months after the operation, Shaw reported that the patient's general condition was much improved, and that, in his opinion, the patient was no longer insane. However, the motor symptoms were not relieved by the operation, and seven months after the operation the patient died during convulsive seizures. Two more cases died, one thirteen months after the operation, during convulsions, and another from gradual exhaustion. A further five cases were under Shaw's care in Stirling Asylum. One died three months after the operation, one died eighteen months after the operation as the disease ran its usual course, and three were alive three years after the operation, with an arrest of the motor symptoms, although mental symptoms still remained. As the article concluded, the review of these twelve cases was hardly encouraging. Only one case was recorded as cured, and the last report upon it was made at too early a period after the operation (five months) to be satisfactorily conclusive. Furthermore, a trawl of the literature finds no other record of surgical therapy in neurosyphilis. Although this form of treatment was clearly known and utilised a little in Scotland, no mention is made of it in any of the four asylum case notes or annual reports

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[109] *Ibid.*, pp.525-6.

In some types of therapy, neurosyphilis was only witnessing the same developments as in other areas of medicine. In the 1890s, serum therapies and anti-toxins became quite popular. They consequently found their way into the treatment of syphilis, with the aim being to produce a serum that would vanquish the disease. In fact, much research was conducted for the production of a syphilitic serum, with the discovery of the syphilitic spirochaete, and the fact that it could be produced in apes. Metchnikoff and Roux had undertaken a series of experiments in order to manufacture a serum from monkeys, but were rewarded with little success.[110] Monkeys were chosen not only because they were inoculable with syphilis, but because they could furnish a serum which had very little haemolytic action on human red blood-corpuscles. Finger and others employed human sera obtained from patients with tertiary syphilis, from cases of secondary syphilis successfully treated by mercury, and from infants with hereditary syphilis.[111] Richet and Hericourt made a further modification by using the serum of animals previously inoculated with human serum obtained from cases of primary and secondary syphilis. Tarnowski injected serum from horses mercurialised by injections of calomel.[112]

Within Scotland, the Edinburgh pathologist and Director of the Scottish Asylums' Pathological Scheme, Ford Robertson, was instrumental in this development of serums to treat neurosyphilis.[113] In 1901, he suggested that GPI was a disease due directly to the toxins of bacteria, the point of attack being the alimentary tract. Two years later, he first announced his theory of *Bacillus paralyticans* as a cause of GPI. In 1905, Ford Robertson and McRae, REA Assistant Physician, reported the presence of the diphtheroid bacilli in the genito-urinary tract in GPI and tabes dorsalis. The same authors, in 1907, discussed the treatment of GPI and tabes by vaccines and antiserum.[114] While they first tried vaccines, they placed

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[110] T. Rankin, 'Syphilis', M.D. thesis, University of Glasgow (1909), p.196.
[111] *Ibid.*
[112] *Ibid.*
[113] In fact, Ford Robertson produced these serums to treat other types of insanity as well, including dementia praecox.
[114] W. Ford Robertson and D. McRae, 'Observations on the Treatment of General Paralysis and Tabes Dorsalis by Vaccines and Anti-Sera', *Review of Neurology and Psychiatry*, 5 (1907), 673-85.

their reliance on the antiserum. The latter was obtained from immunised sheep that had been inoculated with dead cultures of the *Bacillus paralyticans-longus*, isolated from the brain of a general paralytic. After two months' treatment of the sheep, the serum was fit for use. It was administered by mouth, nose or hypodermic.

This method of combating GPI was given a trial. Ford Robertson described the symptoms in one of the cases which improved after two courses of this treatment.[115] He was a married man, aged 41, with no history of insanity. Three weeks after his third injection, a marked physical improvement was noted. However, his weight was only 8st 8lb as compared with 9st 4lb on admission. In another month he put on 6lb and was able to walk and even run. Coordination and pupil reflexes returned to normal, and mentally he was much improved. Four months later his mental and physical improvement was well marked - he had gained another 6lb and was working on the farm. About seven months after admission, therefore, he was being considered for discharge to his wife's care. However, two months after this he dropped to 8st 4lb in weight, became faulty in habits, and got so bad on his legs that he had to be sent back to bed, to all appearances well advanced in the third stage of his disease. A second course of serum was given, after which he showed improvement, but died soon after. Despite the hope with which serum therapy was heralded, it soon became evident that another treatment would have to be found, as this cure could boast no long-term success.

Serums were not utilised by Gartnavel, Woodilee or Rosslynlee, according to the neurosyphilitic case notes. However, the REA made some use of this form of therapy, presumably due to the influence of Ford Robertson. Eleven patients received some form of serum treatment in this Institution during the period from August 1896 to August 1911. The first of these, James E., a 45 year old married waiter, was treated with an antisyphilitic serum on 1 August 1896. He died on 26 August 1897.[116] There is then a substantial gap of nine years before this treatment is mentioned again in my sample of neurosyphilitic case notes. The next patient to be similarly treated, this time with immune serum, was Mary I., a 34 year old married housewife who was admitted in May 1906. Mrs I. was said to be 'always more

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[115] *Ibid.*, p.677.
[116] *Royal Edinburgh Asylum Case Book*, LHB7/51/7/145.

excited after injection but … more coherent and lucid'. She similarly died on 26 July 1906.[117] Robert U., a 39 year old married rubberworker: 'Has been the subject of experimentation with Ford Robertson's injections' in September 1906. He was transferred 'relieved' to Bangour District Asylum on 22 September 1906.[118] Jane E., a 28 year old married housewife, was under serum treatment in 1906. By September 1907: 'She has to all intents and purposes recovered' yet was merely discharged 'relieved' in December 1907.[119] Also in 1906, Elizabeth L., a 46 year old married housewife, received 20cc of sheep serum on 5 December 1906, dying two days later.[120] William D., a 43 year old single gentleman farmer, had an injection of serum on 20 July 1907, with no reaction recorded in the following weeks.[121] Margaret A., a 53 year old single domestic servant (cook), was given four serum treatments during 1907, on 28 April, and 7, 14 and 24 May. The course was given despite the first causing a reaction of 'drowsiness and pain all over her body'. She was discharged 'not improved' to Rosslynlee on 30 July 1907.[122] Susan I., a 39 year old married housewife, received serum treatment intraspinally during 1907, and again in October 1909. By January 1908, she was said to have: 'Greatly improved as result of serum treatment and vaccine'. However, she died in November 1910.[123] Mary C., a 38 year old married housewife, was given anti sera in September 1907. She only reacted slightly to the therapy, 'though she expresses herself as stronger after each dose' and was discharged relieved in December 1907.[124] In most cases, there was no discussion about the rationale behind patient selection for this therapy. One exception was Jane I., a 45 year old married housewife, who was treated with serum for a week in November 1909, but showed no improvement. However, the case notes record why she was chosen for this therapy - 'This has been done as she was in such a poor mental and physical state of health.' She died in August 1910.[125]

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[117] *Ibid.*, LHB7/51/9/143.
[118] *Ibid.*, LHB7/51/84/781.
[119] *Ibid.*, LHB7/51/88/621.
[120] *Ibid.*, LHB7/51/88/325.
[121] *Ibid.*, LHB7/51/86/569.
[122] *Ibid.*, LHB7/51/90/237.
[123] *Ibid.*, LHB7/51/88/33.
[124] *Ibid.*, LHB7/51/90/401.
[125] *Ibid.*, LHB7/51/90/757.

Salvarsan

In 1909, immunologist Paul Ehrlich (1854-1915) announced the discovery of dioxydiamide-arsenobenzol-dihydrochloride, soon known as salvarsan,[126] a chemotherapeutic[127] cure for syphilis. It was a yellow powder containing about 31 per cent of arsenic, kept sealed up in ampoules containing a neutral gas, such as nitrogen, on account of its liability to form a poisonous compound on exposure to air.[128] It was to be administered intravenously because of the extreme pain and even necrosis that followed its injection intramuscularly or subcutaneously. Ehrlich's discovery marked a fundamental breakthrough in the history of modern medical science: for the first time, a specific chemical compound had been demonstrated to kill a specific micro-organism. Ehrlich called the substance – the 606th arsenical he had synthesised in his chemotherapeutic institute, founded three years earlier – a 'magic bullet', a drug that would seek out and destroy the mark.[129] He posited that the world of twentieth-century bioscience would be the elucidation of magic bullets to cure disease. Ehrlich received many honours, culminating in a Nobel prize for medicine in 1908, which he shared with Metchnikoff, for his contributions to immunology.[130]

'Salvarsan', or '606', was hailed by drug companies in Europe as a new cure for syphilis, to replace the heavy metals previously used for treatment. Salvarsan was used to treat not only syphilitic brain disease, but also dementia praecox, delusional insanity, acute mania and acute melancholia. At the time of its discovery, salvarsan was heralded as the dawn of the modern age of clinical medicine. Physicians throughout the world wrote to Ehrlich eagerly seeking supplies of the drug, and

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[126] A chemically equivalent compound was produced in France soon after the appearance of salvarsan, known as 'arsenobenzol'.

[127] Paul Erhlich coined the term chemotherapy. At the most simple level this involved the synthesis of a series of compounds. Their chemical structure was modified and the compound which was found to be most active against the pathogen, and least toxic to the host, was selected. This represented a marked departure from the extractive tradition of pharmaceutical production in the nineteenth century.

[128] L. Harrison, *The Diagnosis and Treatment of Venereal Disease in General Practice*, second edition (London, Hodder and Stoughton, 1919), p.350.

[129] A. Brandt, 'The Syphilis Epidemic and its Relation to AIDS', *Science*, 239 (1988), p.375.

triumphantly reported miraculous recoveries from the greatly feared disease. Despite subsequent developments in syphilis therapy, at the height of the campaign against syphilis in 1940, Warner Bros. produced a feature film celebrating Ehrlich's chemotherapeutic breakthrough of 1910 – the discovery of Salvarsan. *Dr. Ehrlich's Magic Bullet* starred Edward G. Robinson in the lead role, toiling to advance medical progress.[131] When '606' was launched, there was practical unanimity as to the remarkable effect produced by it on syphilitic manifestations. Ivy Mackenzie, first Director of the SWARI, found:

> There is already sufficient evidence to prove that one dose of No.606 can accomplish more than a prolonged course of the ordinary treatment, and that, too, without subjecting the tissues to a continuous saturation with drugs. During the past eight months about 8,000 cases have been treated, and if the hopes which this experience has raised, be realised, Ehrlich's most recent discovery will mark an epoch-making stage in the advance of scientific therapy.[132]

In Edinburgh, George Robertson (the first physician in Britain to use this treatment in GPI[133]) found that:

> This new drug, owing to the large quantity of arsenic in its composition, is strongly germicidal, and a wonderful tonic in disorders of the blood, and it may therefore prove of value in other forms of mental disease.[134]

The Glaswegian pathologists Browning and Mackenzie reached the general conclusion that 'in this drug we have by far the most active anti-syphilitic or anti-spirochaetal remedy yet discovered'.[135] Gartnavel Physician Superintendent Oswald said:

> We owe to [Ivy Mackenzie] that we are among the first in this country to treat general paralysis of the insane by means of Salvarsan. The results have been encouraging, but a prolonged period must elapse

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[130] He was nominated for a further prize in 1912 and 1913 for his work on arsphenamine, but, because of the war and his death in 1915, this was never implemented.
[131] Brandt, *No Magic Bullet*, p.161.
[132] I. MacKenzie, 'Joint Communication on Syphilis: Recent Methods of Diagnosis and Treatment', *Glasgow Medical Journal*, 5 (1910), p.349.
[133] Macleod, 'General Paralysis of the Insane', p.19.
[134] *98th Royal Edinburgh Asylum Annual Report*, 1910, LHB7/7/12, p.20.
[135] C. Browning and I. Mackenzie, *Recent Methods in the Diagnosis and Treatment of Syphilis* (London, Constable and Company, 1911), p.xiv.

> before a definite opinion of the value of this treatment can be arrived at.[136]

Just one year later, Oswald stated:

> The treatment of general paralysis by means of Salvarsan was continued, and two cases derived so much benefit that they were discharged, and when last heard of were doing well. Remembering, however, that remissions to the extent of apparent recovery occur spontaneously in this disease, it cannot absolutely be stated that the improvement was due to the use of the drug.[137]

And not only among doctors was this new treatment received with such hope. News of this new treatment was quickly disseminated, so that it became known by the general public that salvarsan offered hope for those afflicted with syphilis. James T. of Gartnavel, admitted in February 1912, was 'anxious that something should be done to "cure" him. He has evidently heard of salvarsan injections'.[138]

At the REA, George Robertson recorded that:

> Through the kindness of the Director of the Glasgow Asylums' Research Institute [MacKenzie], we were supplied with the drug before it was for sale, and since then we have purchased more. We have treated a good many cases without apparent benefit, but one patient, who was one of the first to be treated, made, almost at once after the injection, the best apparent recovery of any case of undoubted general paralysis I have yet seen. It is two months since this happened, and the patient still keeps well, but I will not yet commit myself to any definite opinion as to whether the progress of the disease has been checked or not.[139]

Woodilee Physician Superintendent Henry Carre stated that seven cases of GPI and one of secondary syphilis were treated with '606'. In four of the cases of GPI, the result was undoubtedly beneficial, patients showing marked improvement both in their physical and mental symptoms after the injection. In two of the cases, the improvement was maintained for eleven and thirteen months respectively, but relapses then occurred, and symptoms which were present before the injection

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[136] *97th Glasgow Royal Asylum Annual Report*, 1910, GGHB13B/2/223, p.17.
[137] *98th Glasgow Royal Asylum Annual Report*, 1911, GGHB13B/2/223, p.22.
[138] *Glasgow Royal Asylum Case Book*, GGHB13/5/145/479.
[139] *98th Royal Edinburgh Asylum Annual Report*, 1910, LHB7/7/12, pp.19-20.

reappeared. The other two cases which benefited had no recurrence of symptoms, one being discharged eight months after treatment and the other working in the garden for ten months. These two patients had received one injection every fourteen months. The three remaining cases of GPI showed no change in their condition after injection, but they came under observation late in the disease.[140]

However, not all reports on salvarsan were so positive. Ehrlich had himself advised caution, and tried to restrict supplies of '606', but in vain.[141] His 'magic bullet' had its shortcomings. Salvarsan was toxic, difficult to administer, and required an extensive regimen of treatment, sometimes for as long as two years. Even when properly administered, the therapy could have all kinds of unpleasant side-effects, including headaches, chills, fever, itching, nausea, and vomiting. It was at first injected intramuscularly or subcutaneously, but gave rise to such severe pain that the local injection was almost universally abandoned, and the usual method of administering it became intravenous. As a result, only 25 per cent of patients received the full complement of injections - not surprisingly, it was difficult to get patients to endure the entire course of treatment.[142] Many considered themselves cured when they were relieved of the symptoms of infection. People could not understand why doctors insisted that they get so many shots, especially when each injection was so costly.

Despite the optimism with which Gartnavel and the REA received Salvarsan, results did not live up to initial hopes. Oswald found that, by 1913, Salvarsan had:

> so far had no good result when injected into the blood in cases of General Paralysis, this manifestation of the Syphilitic virus not appearing till many years after the original infection. The prevention of this protean and inevitably fatal disease therefore depends on the prevention of Syphilis, or on its early cure, although possibly benefit may result in the later stages when some means are discovered or killing the parasite by bringing the drug into more actual contact with the brain substance, the local seat of the disease.[143]

Similarly disappointing results were recorded by the REA Senior Assistant, Brown:

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[140] *Barony Parochial Asylum Annual Report*, 1911, GGHB30/2/15, p.12.
[141] Oriel, *The Scars of Venus*, p.92.
[142] Brandt, *No Magic Bullet*, p.573.
[143] *100th Glasgow Royal Asylum Annual Report*, 1913, GGHB13B/2/223, p.18.

> When I was at Morningside, under Professor Robertson, I had the opportunity of treating cases of general paralysis with salvarsan given intravenously, and with salvarsanised serum administered intrathecally. Definitely favourable results were not obtained by these methods of treatment .... Remissions which occurrred in these cases did not exceed in number those of spontaneous remissions.[144]

In fact, many of the studies of salvarsan found disappointing results, so that Mott declared in 1914: 'Candidly, I do not think any measure of success has attended any of the methods of treatment so far employed for General Paralysis.'[145] The 1911 REA Annual Report reflected pervading reservations: 'European opinion is ... agreed ... that the administration of Salvarsan alone will not cure General Paralysis'.[146]

For several years after its release, Ehrlich was bombarded by doctors and patients with requests for supplies of the drug and advice on its use, and he felt obliged to investigate personally each complaint of adverse reaction. Despite this, and due to the difficulties connected with the preparation of '606' for injection, he managed to bring out his 914th compound, a modified salvarsan called neosalvarsan that could be administered by intramuscular rather than intravenous injection. It was a yellow powder containing 20 per cent of arsenic and very soluble in water, in which it formed a neutral solution. It was much more liable than '606' to become toxic on exposure to air, so that, after dissolving it, there had to be no delay over its injection. Although it was not as effective, it produced less severe reactions in patients and did not require such high precision in technique as Salvarsan. And yet there still remained many adherents to '606'.

Despite the triumphant rhetoric which accompanied the release of Salvarsan, very little use was made of it in Scotland. No patients in Rosslynlee received it, and only one of my REA sample. Robert D., a 33 year old single manufacturer admitted in July 1911, received an intravenous injection of salvarsan on admission, after which he was described as being 'more alert and responsive than he has been for

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[144] D. Brown, 'Some Observations on the Treatment of Mental Diseases', *Edinburgh Medical Journal*, 36 (1929), p.673.
[145] D. MacKenzie, 'The Evaluation and Differentiation of Mental Disorders associated with Syphilis of the Nervous System', M.D. thesis, University of Glasgow (1950), p.8.
[146] *99th Royal Edinburgh Asylum Annual Report*, 1911, LHB7/7/12, p.12.

some time according to his private medical attendant'. He received a further injection of 15cc of salvarsan serum a fortnight later. However, there was very little reaction to this injection, so that he was tried on Ford Robertson's antidiphtheroid serum instead. He was discharged 'relieved'.[147]

Three neurosyphilitics in the Woodilee sample received this form of therapy. The first of these, Elizabeth E., a 42 year old married housewife, received 3 grs of Salvarsan by intramuscular injection on 8 January 1913. She died on 13 October 1913.[148] However, the two other patients to receive this form of therapy made a recovery. William O., a 41 year old married shoemaker, received 4 grammes of neosalvarsan intravenously on 13 March, 1913. He was discharged 'recovered' on 7 December 1914.[149] John T., a 41 year old married railway clerk, received a rigorous course of neosalvarsan, because: 'His blood shows a strong positive reaction to the Wassermann test.' He received intravenous injections in varying doses between October 1925 and January 1926. He also received malarial therapy and quinine in mid-1926, resulting in his immediate discharge 'recovered' on 2 July 1926.[150]

Finally, four Gartnavel neurosyphilitics received this form of therapy between December 1910 and September 1922. Alex P., a 44 year old married master mariner admitted in October 1910, had three intravenous injections of '606'. After the first, in December 1910, which was administered by MacKenzie: 'No ill effects were got, no sickness, no rise of temperature and no disturbance of any kind were observed.' One month later, another injection was given without bad effect. However: 'Although Mr [P.] had no nausea after this injection, today it was noticed that there were signs of thrombosis in the vein' so that he did not receive another injection until the 31 March 1911, when a half dose was given intravenously. Mr [P.] was discharged relieved on 15 May 1911.[151] James Y., a 52 year old married chandler, received a half dose of salvarsan in April 1911, 'and today there is a rise of temperature to 102 otherwise he is very well, talks sensibly and is in good health'. By October 1911, the verdict on his course of salvarsan was that it 'seems to have

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[147] *Royal Edinburgh Asylum Case Book*, LHB7/51/91/757.
[148] *Barony Parochial Asylum Case Book*, GGHB30/5/32/46.
[149] *Ibid.*, GGHB30/4/34/44.
[150] *Ibid.*, GGHB30/4/57/32.
[151] *Glasgow Royal Asylum Case Book*, GGHB13/5/139/530.

had the effect of staying the progress of his trouble, and mental and physical symptoms are stationary'. Receiving no other treatment while in the asylum, Mr Y. died in July 1913.[152] Robert T., a 54 year old single marine engineer, received 6 gr of salvarsan on 5 November 1913, but to no avail, the patient dying on 11 January 1914.[153] Similarly, William O., a 47 year old married public house manager, received six injections of '914' after the 4 September 1922, dying on 29 September 1925.[154]

Where the phrase 'not suitable' was applied to a patient being considered for Salvarsan treatment, its meaning is ambiguous. This label does not appear to be gender or age-related, nor related to the fees which a patient could afford. The duration of the disorder is, however, important. Five of the Gartnavel patients had been insane less than 27 weeks prior to admission, and they were the only ones to receive any treatment. Treatment was rarely given to anyone who had been insane for over a year prior to admission. However, some patients had only been insane for a few days yet received no treatment. In such cases, it seems that their medical condition determined whether they were suitable to undergo any form of heroic therapy, or were too weak or irritable to withstand it. Admitted to Gartnavel in October 1910, 58 year old married John T.'s neosalvarsan was 'stopped on account of his nervous and depressed condition combined with a suicidal tendency'.[155] Bodily condition on admission was also considered. Alexander T., mentioned above, had no symptoms of organic disease on admission, and thus received 6gr of salvarsan. However, James A., a 35 year old single colliery salesman admitted in March 1926, described as: 'A poorly developed young man' on admission, received only sedation and no other treatment during his five-year stay.[156]

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[152] *Ibid.*, GGHB13/5/139/522.
[153] *Ibid.*, GGHB13/5/142/334.
[154] *Ibid.*, GGHB13/5/181/284.
[155] *Ibid.*, GGHB13/5/186/592.
[156] *Ibid.*, GGHB13/5/190/848.

Research based on Erlich's theories continued to produce important results. Further experiments with organic arsenic compounds yielded another valuable drug, tryparsamide. This new pentavalent arsenical, a sodium salt of N-phenyl-glycineamid-p-arsenic acid, was first synthesised by Jacobs and Heidelberger at the Rockefeller Institute in 1915. Tryparsamide, a white, amorphous, crystalline salt, freely soluble in water, could be given intravenously, intramuscularly or subcutaneously. It was tried on humans in 1921 to treat African sleeping sickness. The following year, it was put to the test in cases of syphilis. Although found to be relatively useless in the early stages of syphilis, it quickly proved successful in producing remissions in up to 30 per cent of general paralytics.[157] The first publication on the use of tryparsamide in neurosyphilis did not appear until 26 May 1923, when Lorenz, Loewenhart and co-workers reported very favourably on a series of 180 neurosyphilitics who had been under treatment for two years.[158] They stated that it was more effective than any other form of treatment and that clinical and serological improvement was striking. Further reports appeared to confirm these results, although the volume of literature on this treatment was far less than would be for malaria. Just at the critical stage when the drug was about to be released for distribution, the widespread interest in the malarial treatment of GPI directed attention away from the arsenical compounds, with the result that further literature on tryparsamide was slow in coming forth.

A detailed survey of the literature reveals that reports of the results of this drug in fact varied considerably. Although it appeared to have little or no direct action on the spirochaetes, and although it was useless in the treatment of somatic syphilis, tryparsamide was sold as having a remarkable therapeutic efficiency in cases of neurosyphilis, most probably due to its power of penetrating the nervous system through the meninges. The most salient features which made it so useful in the treatment of neurosyphilis were that the drug possessed a marked affinity for the

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[157] D. Leigh in C. Thompson (ed.), *The Origins of Modern Psychiatry* (Chichester, John Wiley and Sons, 1987), p.222.
[158] T. Davie, 'Tryparsamide Therapy in General Paralysis of the Insane', *Journal of Mental Science*, 73 (1927), p.226.

tissues of the central nervous system; there was no known substance with an equal degree of spirochaeticidal action that possessed the same high power of penetrability; the drug had a remarkable stimulating effect; and it was capable of reinforcing the natural processes of resistance and promoting recuperation.[159]

Clinically, the effects of the drug were encouraging to the patient. It had a general tonic effect as well as a specific action on the syphilitic lesion. American workers noticed that the skin became clearer and the general bodily condition improved.[160] The Edinburgh surgeon and lecturer, David Lees, found that the first and most striking effect of the drug was the marked improvement in patients' general well-being.[161] The weight of the patient was well maintained, and toxic symptoms such as headache, malaise and irritability often disappeared rapidly under its use. The drug appeared to exercise no great effect on the Wassermann test. It did, however, very markedly decrease the cell count of the cerebro-spinal fluid. In addition, it reduced the amount of globulin present, and, in the majority of cases, favourably influenced the colloidal gold curve. An important point in its superiority over any other method of treatment of syphilis of the nervous tissues was the ease of its administration, without any discomfort to the patient, and without any great danger. It was also pointed out that both clinical and serological improvement could continue for some time after the completion of a course of injections.[162] The condition of the patient at the end of treatment and the reactions of his fluids were not to be accepted as the final result, the drug continuing to exert a beneficial effect for some weeks afterwards.

It was apparently: 'Through the kindness of Sir Frederick Mott' that a supply of tryparsamide from the Rockefeller Institute became available early in 1924 at the Maudsley Hospital in London, for the treatment of suitable cases of GPI and tabes.[163] The number of cases initially treated was small, but nonetheless it was thought worthwhile to publish the results, a preliminary report being sent to the Medical

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[159] Macleod, 'General Paralysis of the Insane', p.22.
[160] W. Dawson, 'The Treatment of General Paralysis and Tabes by Tryparsamide', *Archives of Neurology and Psychiatry*, 9 (1927), p.7.
[161] D. Lees, *Practical Methods in the Diagnosis and Treatment of Venereal Diseases* (Edinburgh, E. and S. Livingstone, 1927), p.277.
[162] Dawson, 'The Treatment of General Paralysis', p.7.
[163] *Ibid.*, p.1.

Research Council. They found that in no case in this series was there produced any result not achievable by the administration of other arsenic compounds. Several cases of GPI appeared to have their course arrested, while others improved to a lesser extent. They concluded that it was unproven by this series of cases whether tryparsamide was really more potent than other arsenicals, but the drug was deemed worthy of further trial, it being easy to administer and not toxic in the doses used.[164]

From the literature published in this and other countries dealing with general paralytics treated with tryparsamide in different stages of the disease, complete remissions ranged from 14 to 60 per cent. A clinical remission with considerable recovery of economic efficiency characterised about 35 per cent of these cases.[165] In Scotland, the trials of REA Assistant Physician Davie proved discouraging. In October 1925, he commenced investigations at Gartloch Mental Hospital, placing seventeen cases of GPI under treatment.[166] Two deaths occurred before the course was completed, and in both instances the patients were of the slowly dementing, apathetic type with no other psychotic symptoms. The number of cases under observation was now limited to thirteen. After conclusion of the treatment, two months were allowed to pass and then further clinical and laboratory investigations were carried out. Only two cases failed to benefit. Speech, tremor and gait all improved, more especially the latter, and this was one of the first changes to be manifested. Another study found that of sixteen patients treated in two (unspecified) Scottish asylums, six 'recovered', or obtained a full clinical remission; two were greatly improved; three moderately improved; in two the condition appeared to be arrested; in one it progressed and two died. Five of those in full remission were discharged, and three went back to their previous occupation.[167] Those studies which found the drug to be of value usually conceded that, although short-term findings were good for tryparsamide, 'judgment must be suspended until a longer series of cases have been observed over a prolonged period'.[168] In fact, the general consensus of opinion advised that a preliminary course of tryparsamide followed by

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[164] *Ibid.*, p.8.
[165] Brown, 'Some Observations', p.672.
[166] Davie, 'Tryparsamide Therapy', p.227.
[167] Brown, 'Some Observations', p.672.
[168] W. Dawson, 'Review', *Journal of Mental Science*, 71 (1925), p.613.

malarial injection was the most rational method of treatment, particularly in the debilitated type of early paralytic.

Davie made a careful analysis of all available literature on the subject, and found that up to April 1926, about 2,000 cases of neurosyphilis had been treated by tryparsamide and reported.[169] The great balance of opinion favoured tryparsamide, and there was clinical improvement in about 30 per cent of cases and serological improvement in about 75 per cent of all cases.[170] However, there were limitations to this new therapy. Tryparsamide itself appeared to be quite harmless as far as any general effect on the patient was concerned, with no rise in temperature and no constitutional reaction. However, about 27 per cent showed visual disturbances, usually after the second dose.[171] The chief drawback to its use was the risk of the development of amblyopia (impaired vision), and a number of the studies which began to emerge claimed noticably less success for the drug. The improvement which resulted was often transitory.[172] The drug was to be given in eight weekly doses of 2.0g dissolved in 5-10 c.cm. of distilled water intravenously or into the muscles. Lees found the latter preferable as it was less quickly eliminated from the system. The dose was not to be repeated more frequently than once a week.[173]

Only one patient in Woodilee received tryparsamide, and none at all in Rosslynlee. This Woodilee patient, Margaret D., a 44 year old married housewife, received a course of tryparsamide in April 1929. Resident for five and a half years, she was discharged 'relieved' in December 1933.[174] In Gartnavel, six patients received this therapy from April 1928 onwards. However, it was the REA physicians who were first to introduce tryparsamide into their therapeutic regime. Seven patients in my sample received the therapy after February 1924. Robert T., a 57 year old married solicitor admitted in March 1927, received six tryparsamide treatments within one month. After each injection, however, Mr T. 'became exceedingly confused, restless and dirty in his habits'. And as this confusion

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[169] Davie, 'Tryparsamide Therapy', p.227.
[170] *Ibid.*
[171] G. Fleming, 'Review', *Journal of Mental Science*, 71 (1925), p.609.
[172] D. Henderson and R. Gillespie, *A Textbook of Psychiatry for Students and Practitioners* (London, Oxford University Press, 1927), p.312.
[173] Lees, *Practical Methods*, p.275.
[174] *Barony Parochial Asylum Case Book*, GGHB30/5/59/51.

increased after each injection, the treatment was stopped.[175] William V., a 41 year old widowed tracer admitted in November 1923, received fourteen separate intravenous tryparsamide injections over a two-year period. During the latter weeks of the treatment, he:

> became decidedly more alert. He used to walk about slowly and displaying little interest. Now he walks briskly and is very helpful in the ward. His speech is unaltered. There is still the very noticeable slurrings. Neurological findings remain the same. He is still euphoric but since he has always expressed himself as feeling perfectly well it is difficult to ascertain how he does feel at present. At any rate he has been toned up and is decidely improved.

Furthermore, this improvement resulting from the tryparsamide treatment was noted as being maintained five months later.[176] Of the seven patients receiving this treatment, one was relieved and one recovered, with the remainder dying.

A Return to Non-Specific Treatment: Fever Therapy

During the early 1920s a new treatment was introduced from Europe which seemed a world apart from Ehrlich, Jacobs and Heidelberger's experimental work. GPI became the first disorder to experience a wave of 'physical' psychiatric therapies, when large numbers of patients were deliberately infected with malaria. Unfortunately there have been few comprehensive historical accounts of malarial therapy in the British context. Those I have found are predominately written by doctors as non-analytical, triumphalist histories.[177] Alienists were quick to acknowledge the value of a treatment which could make general paralytics at least more manageable, at best healthy and productive members of society again. However, once again, if we focus on case notes and the implementation of malarial

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[175] *Royal Edinburgh Asylum Case Book*, LHB7/51/116/77.
[176] *Ibid.*, LHB7/51/112/201.
[177] Whitrow's biography of Wagner-Jauregg considers in detail the Austrian alienist's development of malaria therapy, including his years of experimentation leading up to the 1920's. However, her prime concern seems to be to eulogise her subject, with very little consideration of the wider reception and application of his work. See M. Whitrow, *Julius Wagner-Jauregg, 1857-1940* (London, Smith-Gordon, 1993).

therapy as well as printed comments and statistics, it is possible to emphasise the complexity of doctors' attitudes towards the 'friendly fever'.[178] Few, in fact, regarded the therapy as wholly successful or unproblematic. Questions of efficacy and possible dangers were constantly discussed, particularly as initial excitement wore off and the long-term results of treatment were faced. Thus, whilst the Board of Control spoke of malaria therapy as an 'established and proven treatment' in 1930, almost a half of British asylums were still not using it, for a variety of practical and ideological reasons.[179]

The History of the Concept

The idea that fever can have a curative effect on a variety of conditions goes back to antiquity. The 'father of medicine' Hippocrates (c.460-c.377) is said to have remarked that epileptics were often cured of their fits by malaria, while the physician and philosopher Galen (129-210 A.D.) cited a case of melancholy cured as a result of an attack of quartan fever.[180] In 1836, the French alienist Esquirol remarked: 'There are few chronic [mental] illnesses which are not cured when a high fever develops'.[181] Many other instances of a cure or remission of insanity as the result of a feverish illness have been quoted in the literature, particularly during the second half of the nineteenth century.[182]

Julius von Wagner-Jauregg is traditionally the central figure of any discussion about malaria therapy.[183] Although he acknowledged that the treatment was not his original observation, he nonetheless developed and publicised it throughout Europe. Wagner-Jauregg claimed to have been inspired by a series of

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[178] A term adopted in popular American parlance: see, for example, F. Cross, 'Friendly Fever', *Good Housekeeping*, 100: 2 (1935), pp.46-7.
[179] J. Hurn, 'The History of General Paralysis of the Insane in Britain, 1830 to 1950', Ph.D. thesis, University of London (1998), p.195.
[180] Zilboorg and Henry, *A History of Medical Psychology*, p.550.
[181] J. Steel, 'Malarial Therapy in General Paralysis of the Insane', M.D. thesis, University of Edinburgh (1926), n.p.
[182] Whitrow, *Julius Wagner-Jauregg*, p.151.
[183] Julius Wagner-Jauregg (1857-1940) qualified in medicine at the University of Vienna in 1880, before working at the Asylum of Lower Austria in Vienna. As well as his work on malarial therapy, Wagner-Jauregg had success in the fields of goitre and cretinism research. He died, full of honours, at the age of 83. For a fuller account of his life, see Whitrow, *Julius Wagner-Jauregg*.

observations made at the Asylum of Lower Austria in Vienna in 1883, soon after he began working there. A female patient contracted an attack of erysipelas and subsequently recovered from a severe mental disorder.[184] Anxious to ascertain whether the relationship between psychoses and fever was causal or purely incidental, he began a thorough search of the literature, as a result of which he wrote a lengthy article, 'The effect of feverish diseases on psychoses', published in 1887. In this, he reviewed previous articles on the subject, and also related cases from his own experience.

Wagner-Jauregg later recounted that when he began his experiments during the 1880s, he had been forced to discontinue them for a time because 'medical science of that period looked with disfavour at experimentation on human beings'.[185] Subsequently, he recalled that he had continually delayed the use of malaria infection to replace vaccination because of ethical attitudes. Such concerns, however, do not seem to have affected the institutionalisation of malarial therapy during the 1920s. In both the Continent and Britain, malarial therapy quickly took hold, becoming accepted by the establishment with little real concern about its theoretical respectability. By this decade, the ethics of malarial therapy had only been mentioned by a few British authors – Delgado in 1922; Yorke and Macfie in 1924; and Lewis in 1925, who either explicitly mentioned the issue of ethics, or at least stated that they sought familial permission before proceeding with therapy. And, according to McCully:

> Many object to the use of malaria on the ground that an actual living organism is used, and it cannot be disputed that the introduction of a virus capable of multiplying in the body of the individual until there is no possibility of estimating the dose to which he has been subjected, is not desirable. But the resultant fever is usually cut short easily, and the actual bouts of pyrexia can be modifed when necessary by small doses of quinine.[186]

As for familial permission, it is difficult to establish how widespread this system was, with reference only occasionally being made to it in the four Scottish Asylum

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[184] Whitrow, *Julius Wagner-Jauregg*, p.151.
[185] *Ibid.*

case notes. Thus, Margaret C. of Gartnavel, a 26 year old married ropeworker admitted in April 1930, had the following recorded in her progress remarks: 'No history has as yet been obtained from husband, whose permission for malaria will also require to be obtained.'[187]

Wagner-Jauregg himself noted only one clear example of ethical antagonism: the Nobel Prize, for which he was nominated in 1924, was refused because one member of the committee objected to the award. This episode offers an insight into the ethical framework surrounding early heroic treatments. Malarial therapy won the Viennese alienist the Nobel Prize in 1927, the first such honour to be awarded in venereology *or* psychiatry.[188] His name had been put forward for the Prize as early as 1924, but the referee at the time, Gadelius, a Swedish professor of psychiatry, could not be persuaded to recommend the award to a 'physician who injected malaria into a paralytic, because he was in his eyes a criminal'.[189] So Wagner-Jauregg had to wait until Gadelius retired. Nonetheless, the unanimous decision to award the Prize in 1927 demonstrated that mainstream endorsement of the therapy was not dampened by ethical misgivings.

According to Gartnavel Physician Superintendent Henderson, in certain quarters the use of such a form of therapy met with fierce opposition:

> we were threatened, if our malarial treated patients died, that criminal proceedings would be instituted against us. Fortunately malarial therapy, while not free from danger, did not result in fatalities and the benefits derived from it were so remarkable that criticism and opposition were stifled.[190]

In Britain, occasional ethical misgivings would be expressed; but a pragmatic assessment of results would prevent the majority from treating them as a serious

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[186] J. McCully, 'Non-Specific Therapy in the Treatment of Neuro-Syphilis', M.D. thesis, University of Glasgow (1930), p.14.
[187] *Glasgow Royal Asylum Case Book*, GGHB13/5/190/817.
[188] Among the recipients of the Nobel prize for medicine and physiology are only two alienists. The first to be awarded the prize, in 1927, was Wagner-Jauregg; and the second, in 1949, was the Portuguese neuro-surgeon Egas Moniz, who developed the operation of leucotomy for the treatment of severe and progressive psychiatric disorders.
[189] Quotation of Wagner-Jauregg in M. Whitrow, 'Wagner-Jauregg and Fever Therapy', *Medical History*, 34 (1990), pp.294–310.
[190] D. Henderson, *The Evolution of Psychiatry in Scotland* (Edinburgh and London, E. and S. Livingstone, 1964), p.235.

obstacle to practice. The American epidemiologists Austin, Strolley and Lasky, for example, commented that: 'Ethical considerations did not constrain researchers from injecting known pathogens into mental patients.'[191]

The Spread of Malarial Therapy

Malarial therapy spread rapidly throughout Europe and North America. Soon after Wagner-Jauregg published details of his therapy, the treatment was introduced at the Hamburg Asylum and the Hamburg Clinic for Nervous Diseases. During 1920, several other institutions in Germany followed suit. By 1921, the treatment had been introduced to the Netherlands and South America; by 1922, it had spread to Britain, Czechoslovakia and Italy; and by 1923, its use was reported in Denmark, France, Russia, and the United States.[192]

In 1922, the position among alienists in Britain was that they were confronted by successive reports from continental sources claiming up to 40 per cent of cures in a disease hitherto regarded as fatal, and by a method apparently empirical.[193] Accounts in the British literature captured the optimism of the Continental experience, promising dramatic and lasting recoveries in up to a third of patients treated: 'Most cases can be helped', the *Journal of Mental Science* reported: 'To early cases we can, with Wagner-Jauregg, offer a complete cure'.[194] Whittingham was the first British asylum to apply malarial treatment in July 1922. Dr. R. M. Clark inoculated a general paralytic with malaria supplied by Professor J. W. W. Stephens, who at that time occupied the Chair of Tropical Medicine at Liverpool University. During the same year, alienists at the City of London Asylum also made trials, followed closely by doctors at six other London asylums, as well as Rainhill, Cardiff,

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[191] S. Austin, P. Strolley and T. Lasky, 'The History of Malariotherapy for Neurosyphilis', *Journal of the American Medical Association*, 268: 4 (1992), p.518.
[192] J. Braslow, *Mental Ills and Bodily Cures: Psychiatry Treatment in the First Half of the Twentieth Century* (Berkeley, Los Angeles and London, University of California Press, 1997), p.77.
[193] Macleod, 'General Paralysis of the Insane', p.25.
[194] E. Scripture, 'The Treatment of General Paralysis by Malaria: The Use of Speech Inscriptions for Early Diagnosis', *Journal of Mental Science*, 69 (1923), p.82. For a British review of the Austrian results, see W. Yorke, 'Malaria Treatment of General Paralysis of the Insane', *Lancet*, 1 (1926), pp.427-31.

and Winwick.[195] McAlister, Consultant in Psychiatry at Edinburgh Royal Infirmary, inoculated his first patient at the REA in March of the following year, after a series of logistical hurdles in obtaining suitable blood.

Since few institutions were equipped to handle the complexities of the parasites, special treatment and research centres were soon established. The best known of these were the Horton laboratory in Epsom, England; the Syphilis Division of the Johns Hopkins Hospital, Baltimore, Maryland; and the Station for Malaria Research in Tallahasee, Florida. Thus in Britain, Horton Asylum and its laboratory were the principal site of malaria therapy. In 1925, a special unit, then known as the Mott Clinic, was set up at the Horton Hospital for the provision of mosquito infection and transmission to asylums in different parts of the country. This unit was later expanded into the Malaria Reference Laboratory, Horton Hospital, first under the auspices of the Medical Research Council, and then under the Ministry of Health. Besides this, Horton increasingly yielded research into malaria itself, thus also gaining a reputation as Britain's leading research centre for malariology.

Methods of Infection

The technology of malarial therapy changed little in the decades of its existence. Detailed recommendations for carrying out the treatment were continually discussed, with two basic schools of thought – the blood-to-blood school and the mosquito school. The commonest method for inducing malaria was by blood inoculation from one patient to another. This consisted of inoculating a general paralytic with 1-3cc. of *Plasmodium vivax* (tertian) malaria blood, obtained from another patient who was undergoing this treatment.[196] There were three methods here – subcutaneous, intravenous, or intramuscular. The subcutaneous method involved the blood being infected under the skin in the subscapular region. However, by the early 1920s, the accepted method of inoculation was an intravenous injection of several millilitres of

[195] Hurn, 'The History of General Paralysis', p.203.
[196] W. Bruetsch, 'Neurosyphilitic Conditions', in S. Arieti (ed.), *American Handbook of Psychiatry* (New York, Basic Books, 1974), p.144.

malaria-infected blood into the median basilic or another suitable vein in the paretic. Gartnavel physicians seemed generally to favour this method. Regarding the final method of blood-to-blood infection, intramuscular inoculation, relapses were found to be less frequent by this method than by any other route of infection. Intramuscular infection was seen as easy to bring about, with few, if any, disadvantages. The REA tended to use this method.

Prior to inoculating a patient with malaria-infected blood, the proper strain of malaria had to be obtained. All three species of human malaria (excluding the later-accepted *Plasmodium ovale*) were available for therapeutic use in the 1920s: *P. malariae* ('quartan'), *P. vivax* ('benign tertian'), and *P. falciparum* ('malignant tertian'). The most commonly used species was benign tertian, though quartan was useful for those patient who had developed immunity to the former by residence in the tropics. However, Wagner-Jauregg demonstrated the dangers inherent in the use of malarial therapy in 1918, by accidentally inoculating four patients with falciparum instead of vivax malaria. Three of the patients died after 24, 31, and 39 days respectively, despite subsequent treatment with salvarsan and quinine. The malaria of the fourth patient was controlled only after 45 days of intensive quinine treatment.[197]

A further difficulty was that it was not always possible to have suitable malarial blood available exactly at the time wanted. In Edinburgh, a delay in getting such an experiment under way was due precisely to the difficulty of getting an uncomplicated case of benign tertian malaria. As the REA alienists complained to the Board of Control: 'We ransacked the whole of Edinburgh and even applied to the School of Tropical Medicine in London in a vain effort to get a suitable case.'[198] However, they soon had 'the good fortune to admit a young man suffering from Dementia Praecox from whose blood in the course of a paroxysm' they could isolate the tertian organism. Before proceeding with the inoculations, they had their diagnosis confirmed by Colonel Marshall, the lecturer on Tropical Diseases at Edinburgh University.[199]

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[197] Austin, Strolley and Lasky, 'The History of Malariotherapy', p.517.
[198] 'Letter from Royal Edinburgh Asylum to General Board of Control', 11 June 1923, PRO MH51/697.
[199] *Ibid.*

Strains of malaria were maintained for long periods by repeated subinoculations. After inoculating their first patient, physicians maintained malarial strains indefinitely by transmitting the infection from paralytic to paralytic. In Bangour District Asylum, Edinburgh, for example, cases of GPI were 'inoculated one from the other, so as to keep the organism alive as long as possible'.[200] Once the blood was obtained, it was carried in the syringe from one ward to another, wrapped in cotton wool which was dipped in water at about 100F. If the malarial blood was not injected at once, it was to be kept at 37°C. and not shaken.[201] At Claybury Asylum, workers perfected a freezing method whereby defibrinated malarial blood could be sent by post to districts requiring it.[202]

While some observed that infecting one paretic with the blood of another 'offends the esthetic sense of many individuals', few openly disapproved of the practice.[203] And this did not appear to make the treatment inappropriate for private patients, as the REA used it in mostly private patients rather than paupers. However, the American, William White, expressed opposition to this prevailing attitude. He objected to this method because he feared medical complications might result from using the blood of one paretic to infect another with malaria.[204] The blood groups of donors and recipients were important. According to Glynn's retrospective study, 'it has been shown clearly that the incubation period was longer in patients who received incompatible blood than in those who received the same amount of compatible blood'.[205] However in this period, blood types were not yet an issue, so those patients affected by faulty blood transfusions cannot be estimated. On the whole, few of the profusion of articles on GPI and malaria commented unfavourably on this aspect of the treatment. 'Since no evidence of superinfection has been reported', one group wrote, 'we followed the practice of others in not hesitating to

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[200] *Ibid.*
[201] G. Fleming, 'The Present Status of the Malarial Inoculation Treatment for General Paresis', *Journal of Mental Science*, 71 (1925), p.606.
[202] 'The Malarial Treatment of General Paralysis of the Insane', *Lancet*, 1 (1925), p.793.
[203] Braslow, *Mental Ills*, p.76.
[204] *Ibid.*
[205] R. Glynn, 'Studies on the Influence of Infecting Dose on the Severity of Disease', Ph.D. thesis, University of London (1993), p.98.

use the blood of patients having general paralysis in inoculating cases of tabes or cerebrospinal syphilis'.[206]

Instead of producing the disease by the inoculation of malaria blood, it was sometimes induced by the bite of infected mosquitoes. The Scottish Board of Control recommended that mosquito infection be used, possibly because in certain private asylums exception was taken to the injection of blood from one patient into another.[207] Thereafter, many inoculations were effected by allowing infected mosquitoes that had previously fed on infected patients to feed upon the subject. The special department of the Ministry of Health, which maintained a supply of mosquitoes, offered to send a few on application to any hospital which required them. They were brought in small glass jars whose open tops were covered with gauze of fairly wide mesh. The skin of the patient's thigh was gently warmed with a hot water bottle and then the mouth of the jar applied to it. The mosquitoes fed through the gauze and the jar was only removed when several were seen to be gorged.[208]

Steel, based at the County Mental Hospital, Warrington, but completing his M.D. at the University of Edinburgh, found that although mosquitoes were the natural infectors and would possibly be expected to be the most satisfactory method to employ, the experience he had of this method of inducing malaria was somewhat disappointing.[209] Apart from the difficulty of obtaining and feeding the mosquitoes, there were numerous practical disadvantages, chief amongst which was the fact that the incubation period varied widely, even when two patients were 'fed' at the same time and from similar mosquitoes. In addition to this, when pyrexia developed, the first and second rigors were often unsatisfactory, rarely reaching more than 102°F. Steel claimed that in Vienna this procedure was never utilised. Mosquitoes did not make good travellers and many died in transit. Their maintenance was a matter of expense and difficulty and, as they had to be conveyed by a doctor specially detailed for the work, long delays might occur before they could be sent.[210]

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[206] Braslow, *Mental Ills*, p.76.
[207] Steel, 'Malarial Therapy'.
[208] Macleod, 'General Paralysis of the Insane', pp.42-3.
[209] Steel, 'Malarial Therapy'.
[210] *Ibid.*

Despite the divergence of beliefs concerning malaria transmission, a basic protocol was soon developed, which was described by the alienist Nicol in 1929.[211] A sample of blood infected with tertian malaria was injected into the patient. After an incubation period of about two weeks, the patient developed typical recurring febrile attacks with delirium and rigors, during which time he was put on a four-hourly temperature chart, cold-sponged to prevent excessive temperature rises, and subjected to daily blood examinations. After between eight and twelve of these paroxysms, he was treated to arrest the disease. Following the treatment, he was 'generally exhausted and anaemic', and was gradually built up again with tonics - sometimes to receive further infections at intervals.[212]

As well as confusion over the variety of methods, other possible reasons for the sluggish uptake of malaria therapy were inadequate laboratory facilities, and lack of suitable blood. As the Horton Centre and improved methods of transport became established, these became less problematic. As the Claybury Laboratory physician, Rudolf, claimed: 'All that one needed were a microscope, slides, and Leishman's stain, now that blood or mosquitoes could be sent anywhere in the British Isles'.[213] A further speaker confirmed: 'Few places were more remote from civilisation than Western Argyll, yet malarial blood had been conveyed successfully down there, a thermos flask being used'.[214] And yet for many years, Scotland did struggle to find and maintain suitable malarial blood. The demand for this blood here was so small that it was practically impossible to keep a strain going. As, however, there was an increasing demand by Scottish asylums, a Central Register was maintained by the Board of Control to simplify the procedure for the Scottish Asylum Physician Superintendents.[215]

For those Scottish patients who received malarial treatment, the case notes often explain the method of inoculation. John P., a 28-year-old patient admitted in July 1930, received 10cc of citrated malarial blood at 11.30am, taken from a patient

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[211] W. Nicol, 'The Treatment of General Paralysis by Malaria', *British Journal of Venereal Disease*, 5:2 (1929), pp.85–101.
[212] *Ibid.*, p 91.
[213] Discussion, 'General Paralysis', *Journal of Mental Science*, 75 (1929), p.285.
[214] *Ibid.*, p.288.
[215] 'Letter from General Board of Control for Scotland to Superintendents of Mental Hospitals and Medical Officers of Health', 10 January 1944, PRO MH51/538.

undergoing a rigor at 10.30am.[216] Similarly, Mary T., a 39 year old married housewife admitted in September 1930, received the blood 'taken from a patient in the commencement of a rigor'.[217] Alexander O., a 46 year old widowed machineman admitted in July 1927, was 'inoculated with 10ccs malarial blood. In view of the fact that he already has had two courses of this treatment, there may be nothing will come of it'. Treated in August 1927, he was discharged 'relieved', but not until February 1930.[218] Jane O., a 40 year old married housewife admitted in March 1930, was injected intravenously with 5cc of malarial blood from Hawkhead.[219] Similarly, Elizabeth C., a 26 year old married ropeworker admitted in April 1930, received malarial blood 'brought from Hawkhead. It was taken from a male patient who was having rises every alternate day'.[220] At least Hawkhead was another Glaswegian asylum and therefore fairly local. However, James T., a 31 year old married stationer admitted in January 1930, illustrates the difficulty physicians could have in obtaining suitable blood. His Gartnavel physician recorded that he was forced to travel:

> through to Edinburgh today [to obtain] from Wd 32 R. Infirmary 10a of citrated blood. The blood was taken from the vein of a patient at 7.15pm the patient had been having a rigor for 15 minutes before the blood was taken off.[221]

On the eve of World War II, surveying the state of malaria control in the world, Harrison considered it 'in a well-nigh primitive condition'.[222] Given this verdict, the therapeutic use of malaria seems rather strange. As the English parasitologist Professor Warrington Yorke pointed out, 'in the hands of the inexperienced the malaria treatment is undoubtedly a two-edged sword'.[223] The decision as to when to end the febrile attacks by quinine treatment was, according to Yorke, the chief cause of anxiety to the practitioner - if the febrile attacks were

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[216] *Glasgow Royal Asylum Case Book*, GGHB13/5/189/814.
[217] *Ibid.*, GGHB13/5/190/839.
[218] *Barony Parochial Asylum Case Book*, GGHB30/4/59/28.
[219] *Glasgow Royal Asylum Case Book*, GGHB13/5/189/799.
[220] *Ibid.*, GGHB13/5/190/817.
[221] *Ibid.*, GGHB13/5/189/769.
[222] G. Harrison, *Mosquitoes, Malaria and Man: A History of the Hostilities since 1880* (London, John Murray, 1978), p.208.
[223] Yorke, 'Malarial Treatment', p.429.

stopped prematurely there might be no result; and if they were allowed to continue too long, the patient's life might be sacrificed. An English Asylum Deputy Medical Superintendent, Nicol, found one dose of five grains of quinine sufficient for aborting an attack, it producing a remission of fever from ten to fifteen days, during which time the patient regained his strength.[224] Lees controlled the pyrexial attacks, usually after eight to twelve of them had occurred, with the following quantities of quinine: During the first three days 1 gm. of quinine per day in two doses of 1/2 gm. morning and evening. Subsequently, for five to eight days, only 1/2 gm. daily was required.[225] In most cases, after the third day of quinine treatment, the patient was reported to have no more fever, with the parasites having disappeared from the blood. Nicol added that:

> It is surprising how many cases will pick up with ordinary hospital treatment after a few weeks; the mere fact of being kept in bed and given a nourishing diet will restore a case to a condition sufficient to withstand malaria. The main secret of success lies in efficient nursing, such as one can obtain at a centre like this, coupled with expert laboratory control in examining blood films regularly. This, together with the interruption of fever when necessary, should prevent impending risks.[226]

Complications

Although malarial therapy received widespread acceptance, it was also acknowledged that it could be associated with serious complications. In analysing the causes of death, there is little doubt that malaria itself was a potent factor. The death-rate was, in the English senior medical commissioner Rear-Admiral Meagher's study, exceptionally high in the first and second months – 40 per cent of the total deaths took place in the two months succeeding inoculation.[227] Deaths occurring during the treatment were also reported by the English physician Ironside, mostly in

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[224] W. Nicol, 'The Relation of Syphilis to Mental Disorder and the Treatment of General Paralysis of the Insane by Malaria', *Journal of Venereal Disease*, 9 (1933), p.226.
[225] Lees, *Practical Methods*, p.273.
[226] Nicol, 'The Relation of Syphilis', p.226.
[227] E. Meagher, 'General Paralysis and its Treatment by Induced Malaria', *Journal of Mental Science*, 75 (1929), p.716.

debilitated cases from whom the treatment should have been withheld.[228] Many studies showed a high mortality rate, but, when weighed against the grave prognosis for untreated cases of neurosyphilis, the risk seemed acceptable to many physicians. Krauss, in his analysis of 8354 cases of induced malaria, found an overall mortality rate of 5.4 per cent, 9.0 per cent for unselected cases and 1.0 per cent for cases chosen for their low risk for complications. His analysis led him to emphasise the need to select patients to receive malarial therapy who were still relatively healthy.[229] Wagner-Jauregg, on the other hand, found that deaths from malaria ceased to occur provided there was careful cardiac treatment and quinine control. On the other hand, common and dangerous side-effects ranged from muscle pains and jaundice to convulsions and cardiac failure.

The attitudes of physicians towards these considerable risks were by no means straightforward. Some who experimented early with the treatment betrayed a rather cavalier attitude. During the earliest experiments, physicians made individual decisions as to whether consent was necessary, and practice varied accordingly. An alienist at the City of London Asylum claimed:

> During my absence from home the cases were inoculated without communicating with the friends but I have given directions that in all cases in future, the consent of the friends must be obtained first.[230]

In contrast, the Superintendent of Whittingham Asylum admitted:

> To begin with consent was always asked of relatives and almost always readily given - latterly I have not considered this necessary as malaria treatment at present may be said to be the usual and recognised treatment for GPI on the Continent at any rate.[231]

Scottish practice is difficult to assess, since there was rarely any indication in case notes as to whether consent had been obtained.

It is equally difficult to gauge the response of patients' relatives to this issue. Hurn mentions one instance of a man objecting to the treatment of his wife by

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[228] R. Ironside, 'On the Treatment of General Paralysis by Malaria Inoculation', *Journal of Venereal Disease*, 1:1 (1925), pp.60-1.
[229] Austin, Stolley and Lasky, 'The History of Malariotherapy', p.518.
[230] 'Letter from Keen to Board of Control', 11 June 1923, PRO MH 51/697.
[231] 'Letter from Clarke to Board of Control', 13 June 1923, PRO MH 51/697.

malaria, reported and discussed by the Sub-Committee of the London County Council in 1929, suggesting that this was probably an unusual occurrence.[232] Fennell claims that consent was a non-issue for alienists during the period (apart from areas such as surgery and sterilisation); and that the right to treat detained patients at medical discretion was the paramount consideration.[233] The response to malaria therapy does not completely bear this out, since both asylum doctors and the Board were clear that consent was desirable for several reasons: because of the possibility of legal redress; because the treatment was still arguably in its experimental stages; and because of the risks involved. There are no recorded incidences in the Scottish asylums of malarial treatment being withheld due to lack of consent.

Due to a combination of these complications and the shortage of malarial blood, some alienists were very selective as to whom they treated. Gender does not seem to have been a significant consideration. Age rarely proved a barrier to treatment either. Steel set a barrier of 68 to 70, provided the patient was in a moderate state of health. He stated that:

> One of our discharged patients was inoculated a fortnight after his 65th birthday, and has since been doing very well at home, and has resumed to some extent his occupation as a hawker.[234]

However, forms of GPI did matter. Although all forms were exposed to malarial treatment, the classical grandiose and exalted type of GPI seemed to give the best results, while the depressed and apathetic type often gained more slowly and steadily. The galloping type, senile and juvenile cases had a less hopeful prognosis.

The matter of greatest importance was the physical condition of the patient. The prolonged and severe attack of malaria which was essential to the success of the treatment taxed the patient's strength considerably. The chief contra-indication that Steel took into account was the presence of a well-established lesion of the kidney,

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[232] 'Report of the London County Council', 2 August 1929, cited in Hurn, 'The History of General Paralysis', pp.222-3.
[233] P. Fennell, *Treatment without Consent* (London and New York, Routledge, 1996).
[234] Steel, 'Malarial Therapy'.

especially of the acuter forms, which did not have a good prognosis.[235] Furthermore, it was seen as 'courting disaster' to treat advanced semi-bedridden cases, or cases in which there was some serious heart lesion.[236] So many paralytics showed very definite evidence of arterio-sclerosis that giving intravenous medication was not recommended. Also, if the patient showed any sign of jaundice, he was not innoculated. Obese patients did not stand malaria well, tending not to have the same recuperative powers as the others. Pregnancy was not, however, classed as a contra-indication. And yet, in practice, most physicians were less fussy over who they treated, despite the risks. Steel, balancing the risks against the otherwise fatal prognosis, claimed 'one feels inclined to inoculate with malaria if there seems to be the slightest chance that the patient will live through the incubation period and sustain even two rigors'.[237]

Henderson's rationale for selecting patients for malaria treatment was:

> We have reached the conclusion that with few exceptions every patient suffering from general paralysis should have the benefit of this form of treatment, provided that he is in a fair state of health, and is not too advanced in years.[238]

Robert O., a 56 year old widowed chemical worker admitted in September 1928, received an inoculation of malaria and 'stood the strain well'.[239] However, the first of the twelve Gartnavel patients to receive malarial therapy was William S., a 56 year old single buyer in a drapery warehouse admitted in February 1927. After having malarial blood injected into him on 16 March 1927, his treatment was 'stopped as in the opinion of the Medical Staff he has had as much as he can stand'. He died in December 1928.[240] Yet, Susan O., a 48 year old married housewife admitted in November 1923, was deemed inappropriate for this form of treatment:

> Dr Henderson stated that the question of giving her something in the way of treatment would have to be considered, but that at present she

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[235] *Ibid.*
[236] Nicol, 'The Relation of Syphilis', p.226.
[237] Steel, 'Malarial Therapy'.
[238] *118th Glasgow Royal Asylum Annual Report*, 1931, GGHB13B/2/225, p.23.
[239] *Royal Edinburgh Asylum Case Book*, LHB7/51/115/873.
[240] *Glasgow Royal Asylum Case Book*, GGHB13/5/187/612.

> was not fit for much physically. He was not personally in favour of injecting the malaria parasite in her present condition.[241]

The staff had already 'asked her husband's permission for malaria, but Dr. Henderson was not in favour of injecting the malaria parasite in her present condition'.

The final important factor was the relation of the onset of the disease to the time of commencement of treatment. The ideal was to get the patient as early as possible, as it was found that the highest percentage of remissions occurred in those cases where the disease was treated in the early stages. Up to three-fifths of good remissions were confined to cases who received their treatment within the first six months. More advanced cases were liable to exhibit troublesome symptoms during their pyrexia, and could rarely be expected to make a complete clinical and serological recovery after it.[242] Also, in long-standing cases, GPI was expected to have caused irreversible changes to the nervous system. Unfortunately, the Glasgow-based physician Paton bemoaned:

> we are still seriously handicapped by the fact that many cases, indeed most cases, that arrive in mental hospitals, do so when their social activities and mental stage necessitate segregation from their fellows. By then, their condition has progressed beyond a phase when a complete return to their status quo is possible.[243]

Once degeneration of the nervous elements had occurred, the main hope of treatment lay in arresting further progress of the disease.

Theories of How It Worked

In contrast to the so-called specific antisyphilitic remedies such as mercury and salvarsan, malarial fever acquired the designation 'nonspecific', with the belief that it acted through general physiological mechanisms rather than having a specific anti-

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[241] *Ibid.*, GGHB13/5/184/420.
[242] Macleod, 'General Paralysis of the Insane', p.45.
[243] T. Paton, 'Therapeutic Malaria in General Paralysis of the Insane', M.D. thesis, University of Glasgow (1933), p.2.

treponemal effect. For example, Wagner-Jauregg believed that infectious diseases such as malaria weakened the hemato-encephalic barrier, thus allowing specific agents, such as salvarsan and mercury, to enter the central nervous system.[244] Researchers proposed a number of explanations for the efficacy of fever therapy. Many believed that the high temperatures killed the syphilitic spirochaete, a theory supported by experimental findings. In 1919, two European researchers, Jahnel and Weichbrodt, successfully demonstrated the heat sensitivity of syphilis when they placed syphilitic male rabbits with scrotal chancres in an oven heated to 105.8F for thirty to sixty minutes at a time.[245] After several days, the heat had destroyed the spirochaetes. However, that the high temperature alone was responsible for the cure obtained by malaria, according to Steel:

> seems to presuppose that the existence of the spirochaete is responsible for the state of General Paralysis, which is far from the generally accepted view. It is true that the spirochaete does exist in a latent form, but the dementia arises rather from the after-effects of the protozoa.[246]

However 'the very fact that the arsenic preparations have little, if any effect on the disease indicates that the actual presence of the spirochaete is not the true causal factor'.[247]

Other researchers believed that the malaria infection increased antibody formation, and hence increased immunity against the spirochaete. Yet others still found an explanation in the vaso-motor system. They believed that in some cases a condition of anaemia of the brain was cured by the hyperaemia occurring in fever. This view was strengthened by the fact that cases such as melancholia and depression, in which the insanity was deemed to be due to anaemia of the brain, were liable to be cured by fever. The final popular explanation concentrated upon the specific effect of some protein which the disintegrating malaria parasite delivered into the blood. The British parasitologists Yorke and Macfie suggested that the destruction of large numbers of malaria parasites by quinine set free a considerable

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[244] Braslow, *Mental Ills*, p.78.
[245] *Ibid.*
[246] Steel, 'Malarial Therapy'.
[247] *Ibid.*

quantity of soluble antigen 'which provokes by stimulation of the host's tissues the formation of immune body. This immune body if present in sufficient amount destroys the remaining malaria parasites'.[248] It was deemed possible that this immune substance had some prejudicial effect on the spirochaete. However, most authors seemed to believe that, although there were factors supporting each of these theories, no particular one of them completely satisfied the question, and that it was likely that only a combination of them would explain the efficacy of malaria in GPI.

The Initial Reception of the Therapy

It is questionable if any method of treatment that was ever adopted for the relief or cure of insanity has given rise to so much interest, or to the appearance of so many articles in medical and lay publications, as has the use of malaria in GPI. The newspaper articles of the period greeted this remarkable therapy with great excitement and anticipation. In Washington, a 1923 article heralded the unique treatment which had returned patients 'from the mad world in which they wandered', the discovery of this cure reading 'like a romance'.[249] In Scotland, the 1922 Annual Report of George Robertson of the REA announced the new treatment, which the British press immediately picked up on. Following this, as one newspaper chose to phrase it:

> A remarkable discovery which may revolutionise the treatment of diseases has been announced by Professor Robertson at Edinburgh. Simply put, it is nothing more than the playing off of one disease against another.[250]

It was a case of 'Malaria to the Rescue', with the immediate and triumphant verdict that: 'The possibilities of this new cure for general paralysis of the insane are truly staggering.'[251]

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[248] R. Ironside, 'On the Treatment of General Paralysis by Malaria Inoculation', *Journal of Venereal Disease*, 1:1 (1925), p.63.
[249] 'Paresis Cure Found in New Serum, Washington, USA', *Royal Edinburgh Asylum Presscuttings Book*, volume 7, 10 April 1923, LHB7/12/7, p.188.
[250] 'Diseases that Cure Diseases: The Newest Wonder in Medical Science', *Royal Edinburgh Asylum Presscuttings Book*, volume 7, 4 March 1923, LHB7/12/7, p.176.
[251] *Ibid.*

However, despite such a positive reception in annual reports and the press, and despite the promising results recorded by Continental writers, those wishing to know the initial results of malarial treatment in Britain would have been disappointed. Significantly, mortality was very high. Reid, of the Whittingham County Mental Hospital, recorded that of nine paralytics inoculated in 1922, within a decade seven were dead, one remained in hospital, and only one had been discharged and was living at home. He claimed that these were the only patients treated in Britain by malarial inoculation in the year 1922, 'and at first glance the results do not lend themselves to a favourable impression'.[252] However, he completed follow-up studies, with 41 patients who had been treated the following year. Eight years later, one of these patients was unable to be traced, but of the remaining 40, 28 were dead, 7 were still in hospital, and 5 patients were discharged and living at home. Of those patients who died, 5 of them died shortly after treatment, and 12 of the 40 had died within one year of treatment.[253] A survey made for the Board of Control after the first five years of malarial treatment in Britain showed that out of a total of 1,597 patients treated, 541 (33.9%) had died in the course of treatment or soon afterwards, 404 (25.3%) had been discharged as cured, and 652 (40.8%) remained in hospital.[254]

The Viennese experts, in fact, admitted having selected the more promising subjects from their great mass of material, and would certainly avoid cases that through age, length of the disease, or intolerance to fever, would be unlikely to profit by treatment.[255] Balado and Esteves stated that at first they were not favourably impressed with the idea of treating GPI with malaria. In fact, their early results were so unfortunate that they temporarily ceased using this method. They suspected their technique, but soon they discovered that other workers were also getting discouraging results. They considered, however, that further investigation was necessary, as 'to contemplate with arms folded a patient with general paralysis, is to enter into a compact with Death'.[256] Perhaps this was why a strain of triumphalism ran through many of the accounts. Malarial therapy, it was claimed, gave instant, practical results: patients, after all, who would normally rapidly die were being

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[252] B. Reid, 'Malarial Therapy in General Paralysis', M.D. thesis, University of Glasgow (1932), p.155.
[253] *Ibid.*, pp.155-6.
[254] J. Martin, 'Conquest of General Paralysis', *British Medical Journal*, 3 (1972), p.160.
[255] 'The Malarial Treatment of General Paralysis', *Lancet*, 2 (1925), p.390.

discharged from the care of the asylum. Thus Steel urged that malarial therapy was 'more than justified: it is essential'.[257]

The Results of Malarial Therapy in Scotland

Of my sample, ten REA patients received malarial therapy.[258] The first was 54-year-old John U., 54, who was: 'Inoculated with 2ccs of benign tertian malarial blood' on 16 April 1923:

> A week after the injection he had a typical attack of malaria which continued at regular intervals until he had about a dozen attacks. These he stood very well until the end of the series when his temperature rose to 105 and, as he looked very ill … Quinine was administered and the attacks thereupon ceased. Following this he was soon his old self again, but no material benefit resulted from the malarial treatment.[259]

In this institution, according to the Annual Reports, twelve general paralytics were inoculated with malarial blood in 1923. These cases were not inoculated in a series, but directly from the malarial case. Amongst the patients, the average duration of the disease at the time of inoculation was about two and a half years, although individual cases were much more advanced. Of the twelve patients, three were dead within two years. In one case, death occurred within a day or two from intercurrent disease. However, McAlister, Deputy Physician Superintendent of the REA, concluded that no patient actually died from malaria, artificially-produced malaria being easily controlled with quinine. Furthermore, although no patient was completely restored as a result of this treatment, the general physical condition witnessed a small improvement, and the mental condition a more obvious improvement, in the remaining nine.[260] In 1930, also in Edinburgh, Lees claimed to

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[256] J. Robb, 'Review of Balado and Esteves', *Journal of Mental Science*, 76 (1930), p.358.
[257] Steel, 'Malarial Therapy'.
[258] This particular case note count illustrates clearly the fact that the case notes did not note every incidence of the treatment. As p.264 points out, the published literature stated that twelve general paralytics received malarial treatment in the REA in 1923 alone.
[259] *Royal Edinburgh Asylum Case Book*, LHB7/51/108/53.
[260] W. McAlister, 'The Results of the Treatment of General Paralysis by Malaria', *Journal of Mental Science*, 71 (1925), p.237.

have employed malarial treatment with promising results. Of the 45 cases of GPI treated by this method, in over 30 per cent the patients were well, both physically and mentally, and at work.[261] The following year, 'the promising results which were previously reported have been confirmed by longer observation'.[262]

Although Rosslynlee did not seem to use malarial therapy, with no mention of it in the Annual Reports or case notes, Woodilee gave this treatment to three patients. The first, Alexander O., a 53 year old married mechanic admitted in July 1925, began a course of malaria on 9 December 1925.[263] Gartnavel seems to have been a little later in implementing this treatment, although the published literature does record its use by 1926 in the Asylum. In that year, William Whitelaw, successor to Ford Robertson as Director of the SWARI, treated two cases of GPI with malaria. Physician Superintendent Henderson found that one of the cases quickly began to show a certain amount of improvement, 'but far more cases will have to be treated, and a much longer time must elapse, before any definite statement of results can be made'.[264] The Annual Report for 1927 reported the continuation of treatment, but concluded that:

> The results of this work have not been entirely satisfactory. These are cases, undoubtedly, where a certain amount of clinical improvement occurs, but the great majority of the cases of which we have had experience do not respond in the same way nor to the same extent as cases recorded in the literature might lead one to expect. We still feel very sceptical regarding the specificity of this mode of treatment, and a longer time will have to elapse before the results of it can be accurately gauged.[265]

Yet in 1930, Henderson wrote of the same Institution:

> During the year we have continued to make a careful study of cases of general paralysis treated with malaria .... We are satisfied that in many instances the malaria-treated cases have shown astounding and beneficial results never previously attained, and this is so much the case that we would advocate malaria therapy in every patient

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[261] *Annual Report of the City of Edinburgh Public Health Department*, 1930, LHB16/2/12, p.75.
[262] *Annual Report of the City of Edinburgh Public Health Department*, 1931, LHB16/2/13, p.74
[263] *Barony Parochial Asylum Case Book*, GGHB30/4/57/12.
[264] *113th Glasgow Royal Asylum Annual Report*, 1926, GGHB13B/2/224, p.26.
[265] *114th Glasgow Royal Asylum Annual Report*, 1927, GGHB13B/2/224, p.25.

> suffering from general paralysis who shows a reasonable chance of betterment. We have still our failures, but a distinct and definite advance has been made.[266]

And the following year:

> We have continued to make a careful study of cases of general paralysis treated with malaria. The successful application of malaria therapy has effected a great change. Previously it was the rule for untreated cases of this disease to progress rapidly and to terminate fatally in a period of from two to five years .... Now, as a result of malaria therapy, remissions are much more frequent, the course of the disease has been ameliorated and lengthened, while a return to home and employment is now possible, although still in a minority of cases. In a series of twenty cases treated at Gartnavel, ten patients have been discharged as recovered, or so far relieved as to be cared for under home conditions. Six more were improved, and four died. In a series of thirty-four cases which were not treated, only four were discharged as recovered or relieved, while twenty-six died. The death-rate, therefore, in malaria-treated cases is approximately 20 per cent, as compared to 76 per cent in the non-malaria treated cases.[267]

In 1931, the General Board of Lunacy published a report into malarial therapy in Scotland, comparing the total number of cases of GPI admitted to Scottish Asylums during the years 1922 to 1931 with the proportion of those treated by induced malaria or other methods (see **Table 6.1**). The table shows a steady rise in the numbers being treated by this method, but the majority still being treated by other means. From the returns received from all the Scottish Asylums, during the decade ending 31 December 1931, 403 general paralytics were discharged, 116 after treatment by induced malaria and 287 after treatment other than by induced malaria alone. Of that number, 99 (including 40 after malarial treatment) were discharged as recovered, 110 (including 48 after malarial treatment) discharged as 'relieved' and 194 (including 28 after malarial treatment) discharged as 'not improved'. They concluded that a discharge of 15 per cent was proof that malaria did induce at least a partial 'remission' if nothing more. In addition, it was claimed that malaria had

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[266] *117th Glasgow Royal Asylum Annual Report*, 1930, GGHB13B/2/224, p.23.
[267] *118th Glasgow Royal Asylum Annual Report*, 1931, GGHB13B/2/225, p.23.

helped to keep alive 41 per cent of the other patients, many of whom would have been dead before this. It had furthermore altered the faulty habits of many patients.

The Scottish case notes record widely differing results in those patients so treated. After receiving malarial treatment on admission in September 1930, James J., according to his mother, 'was practically his old self' and he was subsequently discharged 'recovered'.[268] Similarly Jane O., after an intravenous injection of malarial blood, managed a spontaneous remission.[269] William U., a 52 year old married joiner admitted in October 1928, received a malaria inoculation in February 1923. However, he soon underwent a pronounced deterioration, 'constantly raving during wakeful hours and frequently requiring sedative'.[270]

Table 6.1 Malarial Therapy in the Asylums of Scotland, 1922-1931

Year	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
Total no. of GPI Patients	201	182	172	150	156	169	175	186	180	161
Malaria only	-	5	8	18	24	36	28	43	34	43
Other methods	48	50	62	57	53	51	54	82	74	84

Source: *18th Board of Control for Scotland Annual Report*, 1931, GGHB13B/14/72, p.xxiii.

[268] *Glasgow Royal Asylum Case Book*, GGHB13/5/190/844.
[269] *Ibid.*, GGHB13/5/184/420.
[270] *Ibid.*, GGHB13/5/187/632.

There was a range of problems in interpreting such claims, however, some of which were admitted by contemporaries. Despite the many positive studies on malarial therapy, few seemed fully to appreciate the remissive character of GPI and the need, therefore, to delay findings sufficiently to rule out this explanation. McAlister, Deputy Physician Superintendent of the REA, urged caution in interpreting his results owing to the well-known tendency for the disease to show natural remissions.[271] It was perfectly natural for general paralytics to display a temporary arrest of symptoms without any treatment at all. Thus he cautioned:

> It is impossible to distinguish clinically natural remissions from those produced artificially. Until a very large number of cases have been treated in this way it would be impossible to eliminate the possibility of mere coincidence in the results.[272]

Henderson, as mentioned above, similarly felt it important to wait several years before reporting the results of this treatment.

The problems of defining terms like 'cure' and 'remission', which were often used interchangeably, were clear. In the Edinburgh Royal Infirmary, a patient was considered 'cured' if he was able to resume his life without supervision and carry on a similar occupation. This could be in spite of positive serological tests. To be 'improved', the patient must show very striking physical and mental improvement, no longer requiring institutional care or strict supervision, but be able to resume his former occupation and mode of life.[273] In general terms, a good remission involved a degree of mental and physical recovery which enabled the patient to become a normal citizen again. A 'partial recovery' covered those unable to obtain or retain regular employment. More slippery was the term 'relieved', which covered a multitude of improvements, however minor, relating to bodily or mental health, or

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[271] McAlister, 'The Results of the Treatment', p.77.
[272] *Ibid.*, p.81.
[273] R. Lees, 'The Treatment of General Paralysis of the Insane', M.D. thesis, University of Edinburgh (1938), p.75.

merely habits. 'Not improved' covered those unable to be kept at home, tending to be reserved for only the most chronic patients.

As there were no randomised clinical trials, we cannot gauge the overall efficacy of malarial therapy. Although Wagner-Jauregg was evidently strongly interested in the importance of experimental design, he was said to have been frustrated by his inability to organise larger comparative trials: working at a short-stay clinic he had access to only small numbers of patients, and could not persuade larger asylums to co-operate. The English Board of Control commissioned a large-scale analysis of results intended to judge the benefits of malarial therapy 'for the satisfaction of both professionals and the general public', with the task of analysing the data falling to the senior medical commissioner, Meagher.[274] However, there was no similar study conducted in Scotland in the period under study.

Combined Treatment

By the later 1920s, studies began to emerge suggesting combining malaria with other types of therapy, and in particular tryparsamide or bismuth. Already in 1917, Wagner-Jauregg had followed up malaria therapy with arsphenamine injections. However, he found it difficult to convince even his clinic co-workers of the soundness of this combined treatment, and 'had to defend vehemently this principle in scientific discussions, until it was generally recognized'.[275] In 1939, a year before his death, the 82-year-old Wagner-Jauregg described in great detail the state of the treatment of GPI. He thought that the time had come to consider whether his malaria therapy was still the most efficient treatment, or whether chemotherapy or the production of high temperatures by physical means could claim to be equally good or even better.[276] At the Vienna Clinic, stress was laid on the need to combine malaria therapy with chemotherapy, for example treatment with 5-valent arsenic

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[274] See E. Meagher, 'General Paralysis and its Treatment by Induced Malaria', 1929, PRO MH51/537, for the results of this survey, and Hurn, 'The History of General Paralysis', pp.229-34. , for a discussion of the findings.

[275] J. Wagner-Jauregg, 'The History of the Malaria Treatment of General Paralysis', *American Journal of Psychiatry*, 102 (1945-6), p.580.

[276] Whitrow, *Julius Wagner-Jauregg*, p.172.

preparations, such as tryparsamide and Stovarsol. Wagner-Jauregg found both of these to have a very favourable effect on late forms of neurosyphilis, particularly on the spinal fluid.

In Britain, Meagher mentioned the need to reinforce malaria by some supplemental treatment, and in this he was merely following most continental centres, where it was found that supplemental treatment was being given as a matter of course.[277] In fact, this tendency towards combined therapy posed difficulties in the appraisal of malarial therapy, because in most clinics it was soon supplemented by arsenicals. Rice of Norwich stated that it was not easy to employ malarial treatment in a small institution without proper laboratory facilities, and that tryparsamide offered a suitable alternative.[278] However, a number of larger institutions were combining tryparsamide with malarial therapy. In Horton, where most paralytics were only given malaria, and only a few cases received a supplementary course of anti-specific treatment or tryparsamide:

> even with this small number and from the experience of other workers, supplementary treatment is indicated, the life of the patient is prolonged and the recovery rate in some series is higher.[279]

The Glasgow-based physician, Dymock, used a combination of malarial, tryparsamide and bismuth therapy, with a 67 per cent recovery rate. A further 17 per cent of the cases had the disease arrested, with 17 per cent seeing no improvement. In this series of cases, no deaths occurred.[280]

Woodilee did not combine malaria with tryparsamide, giving one or the other to its neurosyphilitics. In Gartnavel, however, tryparsamide was only ever used in combination with malaria, with all six patients who received tryparsamide also receiving malarial therapy. Only the last of these received the tryparsamide course before the malarial therapy, as in every other case the malarial blood was injected before a course of tryparsamide was given. However, malaria could be given

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[277] Meagher, 'General Paralysis and its Treatment', p.717.
[278] 'GPI Discussion', *Journal of Mental Science*, p.290.
[279] Nicol, 'The Relation of Syphilis', p.225.
[280] T. Dymock, 'A Review of the Treatment of General Paralysis', M.D. thesis, University of Glasgow (1933), p.96.

independently. In the REA, tryparsamide and malarial could be given separately *or* together. Unfortunately there is no accompanying statement to explain these differing institutional ideologies.

Malaria and the Other Types of Neurosyphilis

Malarial therapy was also made use of in cases of juvenile GPI. In a series of fifty cases of GPI treated in Edinburgh under the Corporation VD clinic, of which 28 per cent of the cases were juvenile, the same treatment regime was followed throughout of therapeutic malaria followed by a prolonged period of antiluetic drugs.[281] Several cases of juvenile GPI were also treated with malaria by Dr. Nabarro at the Hospital for Sick Children, Great Ormond Street, and King's College Hospital and the East London Hospital for Children, Shadwell: 'Apparently these young patients (five years of age and upwards) stand the treatment well.'[282] However, possibly because of ethical considerations, or the quicker progression of this form of GPI, few articles mention malarial therapy in juveniles. Of the four Scottish asylums, only Woodilee admitted juvenile general paralytics in this period. According to their case notes, not one received any form of treatment except basic nursing such as catheterisation, despite their youth and the supposed chance it held for them to recover.

Although malarial therapy was intended for general paralytics, a review of the literature indicates that it was used to a limited extent in other types of neurosyphilis, although predominantly outside Britain. The American physician Ebaugh was interested in trying out this treatment in cases of tabes and cerebral syphilis, especially in patients who previously had not responded to the usual intensive antisyphilitic methods. His aim was to see whether malaria could be added to the armamentarium directed toward the treatment of late syphilis, and whether a course of therapeutic malaria would result in any symptomatic improvement, especially in cases in which there were lightning pains which did not respond to

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[281] R. Lees, 'Treatment of General Paralysis of the Insane by Induced Malaria: Note on Fifty Cases', *British Medical Journal*, 2 (1931), p.336.
[282] 'Letter from Ministry of Health, Whitehall, to Board of Control', 31 May 1927, PRO MH51/698.

other types of treatment.[283] Ebaugh found a level of success in striking contrast to the results gained from older methods of treatment, qualifying that only a small number of cases were treated and there was only a short interval after treatment. However, Nonne in Germany was not convinced that malaria was as valuable in the treatment of tabes as it was in GPI. Hoff and Kauders, reporting from Wagner-Jauregg's clinic, were more optimistic, obtaining a 43 per cent improvement in their tabes cases.[284] Similarly, REA Assistant Physician Brown found good results from malarial treatment in tabes and tabo-paralysis, with the lightning pains disappearing in many cases. He also found cerebral syphilis benefited from the same treatment.[285]

Despite the fact that Henderson and Gillespie advised that the treatment of cerebral syphilis should not differ in any way from the treatment of syphilis in general,[286] the only case of cerebral syphilis, that of Robert I., a 54 year old single clerk, admitted to Gartnavel in May 1922, received only tincture of digitalis on admission, and died after being resident only ten days. The only case of tabes dorsalis, William N., a 45 year old married labourer, admitted to Rosslynlee in June 1905, received no treatment, and died after two years residence. However, tabetic GPI was a little more common, with two REA cases and six Gartnavel cases in this period. Of them, only sedation and general nursing were given. Thus not one of these non-GPI neurosyphilitics was given any treatment in this period, according to their case notes. It seems that it was only the general paralytics who were privileged to receive the variety of treatments on offer.

Post-1930 Developments

The effectiveness of fever therapy was generally acknowledged, but Jauregg's method left physicians with the problem of controlling the malaria. Furthermore, during the 1930s, it was clearly established that it was not the malaria *per se*, but the

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[283] F. Ebaugh, 'Treatment of Tabes and Cerebral Syphilis with Malaria', *Journal of the American Medical Association*, 91 (1928), p.1020.
[284] *Ibid.*
[285] Brown, 'Some Observations', p.671.
[286] Henderson and Gillespie, *Textbook of Psychiatry*, p.319.

fever, that produced the improvement – presumably because the high temperatures and some aspect of the body's reaction to the heat combined to destroy the spirochaete. Thus several devices for artificially heating patients began to be introduced. Diathermy, for example, artificially raised body temperature by placing the patient in a radio-frequency field generated in a body-sized device. However, aside from being expensive and possible only in large centres, there was the drawback that slight slips in technique could cause serious burns.[287] So other methods of artificially raising body temperature were sought. Hot baths, hot air, radiothermy, infrared light cabinets, and special electric 'mummy bags' were all used to induce fever. Yet a 1938 Edinburgh Report stated that physical methods of the production of pyrexia had been almost entirely abandoned due to the fact that: 'They are not very effective and are frequently dangerous.'[288]

A comparison with the United States is interesting here, as alienists were reputed to have received malarial therapy particularly enthusiastically during the 1920s, and to have exploited voluntary and early treatment far more widely - but to have experienced a far more vigorous ethical backlash. They also exploited 'artificial' forms of fever therapy, such as electropyrexia and the Kettering hypertherm, to a far greater extent than British alienists. Much American work was done on the induction of artificial fever by physical means. Hot baths, light baths, diathermy, and short wave-length irradiation were all used with some measure of success. In 1926, Schamberg and Rule performed some experiments in which rabbits inoculated with spirochaetes were protected against the development of primary syphilitic lesions by giving them hot baths.[289] In 1934, the 'fever box' was introduced by Charles Kettering, an American automotive engineer and inventor. It was a large metal container that covered everything but the patient's head. Electrical coils or hot air would gradually raise the temperature inside to 106.7°F.[290] By the late 1930s, however, the method of choice was heated and humidified fever cabinets supplemented as the occasion required by inductotherms. Many of the earlier objections to fever therapy were thus overcome by modern methods which provided

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[287] Cassel, *The Secret Plague*, p.57.
[288] Lees, 'The Treatment of General Paralysis', p.58.
[289] 'Pyrexia in the Treatment of G.P.I.', *Lancet*, 2 (1932), p.406.
[290] Cassel, *The Secret Plague*, p.57.

high humidities, low cabinet temperatures, sedation, oxygen administration, and replacement by mouth or infusion of the water and salt lost by perspiration.

The advent of penicillin in the mid-1940s ineluctably signalled the beginning of the end of malarial therapy for syphilis. However, it was not immediately accepted. As one authority observed as late as the 1950s:

> While penicillin has produced worth-while results in treating general paresis, it has been no more satisfactory than fever therapy. Its advantages are: shorter duration than malarial treatment, reduction in the danger of cardiac complications, less nursing, and a rapid convalescent.[291]

In Scotland, malarial therapy was still being employed by the Western and Northern Regional Hospital Boards as late as 1959. Elsewhere in Scotland, it had been gradually abandoned in favour of intensive penicillin therapy, although pyrexial treatment using the inductotherm was still employed in resistant cases of GPI.[292] As suggested by the title of an editorial on the subject, the 'final curtain' did not come down on malarial therapy in Britain until the 1970s,[293] and combined therapy with penicillin and malaria, particularly common in the United States, only ceased in the mid-1960s.

Non-Treatment

Although this chapter has been concerned with the treatment of neurosyphilis, a final word should be said on the matter of the deliberate non-treatment of tertiary syphilitics. In an era in which hospital experimentation was already seen as unethical and unacceptable, particularly since charitable hospitals had to be seen to observe public sentiment, asylums too had to be careful to please subscribers.[294] A

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[291] W. Sadler, *Practice of Psychiatry* (London, Henry Kimpton, 1953), p.499.
[292] R. Davidson, *Dangerous Liaisons: A Social History of Venereal Disease in Twentieth-Century Scotland* (Amsterdam, Rodopi, 2001), pp.277-8.
[293] Anon, 'A Final Curtain', *British Medical Journal*, 1 (1975), p.578.
[294] On the subject of unethical experimentation, see S. Lederer, '"The Right and Wrong of Making Experiments on Human Beings": Udo J. Wile and Syphilis', *Bulletin of the History of Medicine*, 58:3 (1984), 380-97.

proper assessment of the course of untreated syphilis was not made until the twentieth century, by which point such an assessment was considered to be important not only in its own right but in providing a yardstick with which the effects of treatment could be measured.

A Norwegian syphilologist, Caesar Boeck (1845-1913), was the first to attempt such a study.[295] He was in charge of the Dermatological Clinic at Oslo between 1891 and 1910, and had come to believe that the existing treatments of syphilis were toxic and ineffective and that patients might progress just as well if they were left untreated. Thus Boeck initiated a long-term study of a group of subjects with early syphilis, abstaining from treating 2,000 patients with primary and secondary syphilis between 1891 and 1910. He kept these patients in hospital until they were considered to be non-infectious, usually a period of about three months. In this way the general public, if not the patients themselves, were safeguarded by the hospitalisation of these patients until cicatrisation was complete. Meanwhile the patients were given general nursing care but no specific treatment. Boek's successors followed up this experiment in 1929 and again in 1949. They found that only 25 per cent of the patients had relapsed into the secondary stage, 15 per cent had benign tertiary local symptoms of skin and bones, 14 per cent had cardiovascular symptoms, and only 10 per cent had developed neurosyphilis. They concluded that two-thirds of the patients had lived with their syphilis with a minimum of discomfort, even though it had not been treated. Nonetheless, they thought that syphilis should be treated, for its outcome in a given subject could not be predicted, and it could lead to serious problems in 30 to 40 per cent of cases, sequellae which could also be transmitted to offspring.[296]

A larger, and far more controversial, study of the course of untreated syphilis was arranged by the United States Public Health Service (PHS) at Tuskegee, Alabama in 1932.[297] The results of follow-up examinations were similar to those reported in Norway - gummatous disease, cardiovascular and neurosyphilis were relatively common in the untreated group. However, there was an important element

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[295] Oriel, *The Scars of Venus*, p.100.
[296] C. Quétel, *History of Syphilis* (Cambridge, Polity Press, 1990), p.257.
[297] For a fascinating and detailed account of this episode, see J. Jones, *Bad Blood: The Tuskegee Syphilis Experiment* (New York, The Free Press, 1993).

to this particular study. All the participants were black and in the tertiary stage of the disease.[298] In July 1972, Jean Heller of the Associated Press broke the story: for forty years the United States PHS had been conducting a study of the effects of untreated syphilis on black men in Macon County, Alabama. The Tuskegee Study, as the experiment had come to be called, involved a substantial number of men - 399 who had syphilis and an additional 201 who were free of the disease chosen to serve as controls. All of the syphilitic men were in the late stage of the disease when the study began. The fact that only men who had late syphilis were selected for the study indicated that the investigators were eager to learn more about the serious complications that resulted during the final phase of the disease. Published reports on the experiment consistently showed higher rates of mortality and morbidity among the syphilitics than the controls. In fact, the press reported that as of 1969 at least 28 and perhaps as many as 100 men had died as a direct result of complications caused by syphilis. Others had developed serious syphilis-related heart conditions that may have contributed to their deaths.

The Tuskegee study was quickly criticised as being unethical – written informed consent was not obtained from any of the participants – and possibly racist. The Tuskegee Study had nothing to do with treatment. No new drugs were tested; neither was any effort made to establish the efficacy of old forms of treatment. It was a non-therapeutic experiment, aimed at compiling data on the effects of the spontaneous evolution of syphilis in black males. Apologists for the Tuskegee Study contended that it was at best problematic whether the syphilitic subjects could have been helped by the treatment that was available when the study began. As one Public Health Officer put it, the drugs offered 'more potential harm for the patient than potential benefit'.[299] PHS officials argued that these facts suggested that the experiment had not been conceived in a moral vacuum. Discrediting the efficacy of mercury and salvarsan helped blunt the issue of withholding treatment during the early years, but officials had a great deal more difficulty explaining why penicillin was denied in the 1940s.

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[298] T. Savitt, 'The Use of Blacks for Medical Experimentation and Demonstration in the Old South', *Journal of Southern History*, 48 (1982), p.279.
[299] J. Jones, 'The Tuskegee Syphilis Experiment', in S. Harding (ed.), *The "Racial" Economy of Science* (Bloomington, Indiana University Press, 1993), p.279.

Although most likely due to the ineffectiveness of neurosyphilis treatments, rather than for experimental reasons, a large proportion of the Scottish neurosyphilitics were given no treatment at all, even in the post-1910 period. Many long-stay patients got no treatment except occasional nursing. This was true of nearly half of Gartnavel neurosyphilitics between 1880 and 1930 – 47 per cent received no treatment except nursing during their stay. However, this proportion rises to 75 per cent for the REA and 77 per cent for Rosslynlee. And for Woodilee, 83 per cent of neurosyphilitics received no treatment. Obviously a treatment is not always noted in the case notes, so that the percentages are possibly not as pronounced as those noted. Curiously, having analysed the social and medical characteristics of these patients, there are no factors which explain why these particular patients received no treatment, rather than any of the others.

Age is certainly not a factor – in Woodilee, patients aged 17 and 60 received no treatment. Neither is it gender, as both males and females were given the various forms of treatment, or no treatment at all, except in Woodilee, where none of the 41 females resident received any treatment. Clearly class is not the issue, as the four asylums cover the spectrum of the very poor and wealthy. Length of stay does not even seem to make much difference. Although patients often received treatment soon after their admission, some of these patients had been insane a long time prior to admission, while others were only recently deemed insane. In the REA, for example, some patients were there for in excess of 2,500 days yet received no treatment whatsoever, including Elizabeth E., a 49 year old single tailoress admitted in January 1905,[300] or John T., a 41 year old single grocer admitted in April 1915.[301] Clearly, if a patient was not in decent bodily health, tryparsamide or malaria would not be risked. Patients like Alexander U. of Rosslynlee, a 59 year old married labourer admitted in February 1924, was 'in a low state of health' and received no treatment whatsoever.[302] On the other hand, James H. of Gartnavel, resident in 1926 when several means of treatment were available, and judged to be in good physical condition, received no treatment for his neurosyphilis.[303]

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[300] *Royal Edinburgh Asylum Case Book*, LHB7/51/85/345.
[301] *Ibid.*, LHB7/51/98/173.
[302] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/33/133.
[303] *Ibid.*, LHB33/13/183/366.

Table 6.2 Result of Asylum Stay for Scottish Neurosyphilitic Patients, 1880-1930

RESULT	1880-1910 (%)	1911-1930 (%)
Recovered	4	5
Relieved	13	13
Died	8	8
Not Improved	75	72
Not Given	0	2
(n)	(557)	(354)

Source: *Four Asylum Case Notes*, 1880-1930, LHB7/51/34-120, LHB33/13/5-36, GGHB13/5/62-67 & 123-148, GGHB13/5/98-122 & 149-194, GGHB30/4/1-63, and GGHB30/5/1-61.

As **Table 6.2** illustrates, there is surprisingly little difference in the post-1910 period, in terms of the efficacy of treatments for neurosyphilis. In the period from 1880 to 1930, only 43 patients in my sample recovered. Of the four patients to be discharged 'recovered' from Rosslynlee, significantly not one of them had received any treatment. The three males and one female, aged 21, 24, 43 and 45, and resident between 57 and 529 days, did not even receive sedation. There was no suggestion in the case notes that their diagnoses of GPI may have been erroneous, except in one of the cases. It was recorded on admission in August 1923 that 24 year old Jane H. suffered from Adolescent Insanity, and there might therefore have been doubt over her neurosyphilitic status.[304] Woodilee had rather more recoveries in this fifty-year period, with thirteen patients falling into this category. Significantly, all thirteen were male general paralytics, with only two receiving any form of neurosyphilitic treatment. Robert O., a 41 year old married shoemaker, received 4 gr of neosalvarsan in March 1913,[305] while William T., a 41 year old married railway clerk, received a course of neosalvarsan, followed by malaria and quinine between October 1925 and June 1926.[306] Both were treated immediately upon admission.

[304] *Ibid.*, LHB33/13/33/93.
[305] *Barony Parochial Asylum Case Book*, GGHB30/4/34/44.
[306] *Ibid.*, GGHB30/4/57/32.

Gartnavel discharged six patients as 'recovered' during the period from 1880 to 1930. Two of these, admitted in 1908 and 1917 respectively, received no treatment. The third, John A., a 35 year old single colliery salesman, despite being resident in the asylum from March 1926 to January 1931, received only sedation during his stay.[307] However, the remaining three received a combination of neurosyphilitic therapies. Alexander P., a 28-year-old patient admitted in July 1930, received an extensive regime of sedation, malaria, quinine, and eight separate tryparsamide treatments ranging from 1 to 3grs over just four months.[308] Susan O., a 40 year old married housewife, received sedation, malaria and quinine treatment during her six-month stay between March and September 1930.[309] And finally, James K., a 34 year old married mason, received malaria, quinine and seven tryparsamide injections within the space of four months in late 1930.[310]

The REA recorded a more impressive twenty recoveries within the fifty-year period. Eight of these patients received no treatment, while a further eight received iodide only, and two mercury and potassium iodide. Mary E., a 36 year old married housewife admitted in November 1897, received only quinine during her stay, although it is possible that she also received malaria and it was not noted in her case notes.[311] Only Robert O., a 56 year old widowed chemical worker, received anything more substantial, being subjected to sedation, malaria, quinine and tryparsamide over a three-month period on his admission in September 1928.[312]

The above paragraphs reveal that the vast majority of the patients who recovered had in fact received no treatment whatsoever. Those given one or more of salvarsan, tryparsamide and malaria rarely made a full recovery. There are similar findings for the 'relieved' patients. Not one of the nine Rosslynlee patients discharged 'relieved' had any treatment. Even more significantly, 39 patients were discharged 'relieved' from Woodilee, with only one of these receiving treatment, in this case malaria. Gartnavel records 22 patients discharged 'relieved', of which two received potassium iodide treatment, one received three courses of salvarsan over a

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[307] *Glasgow Royal Asylum Case Book*, GGHB13/5/190/848.
[308] *Ibid.*, GGHB13/5/189/814.
[309] *Ibid.*, GGHB13/5/189/799.
[310] *Ibid.*, GGHB13/5/190/844.
[311] *Royal Edinburgh Asylum Case Book*, LHB7/51/68/541.
[312] *Ibid.*, LHB7/51/115/873.

three month period, one received malaria, and two received tryparsamide and malaria. For the REA, of 46 'relieved' neurosyphilitics, eight received KI, one received serum, one salvarsan, and one malaria, and one received a combination of malaria, tryparsamide and bismuth. The remaining 34 received no treatment.

As for those patients who did receive treatment, the majority died. For Rosslynlee, of those five patients receiving iodide treatment, four died and one was tranferred to the REA 'not improved'. For Woodilee, of those receiving salvarsan, two recovered and one died, although one of those to recover also got malarial therapy. The patient to get tryparsamide was discharged 'relieved', while of the three patients to get malarial therapy, one died, one was 'relieved' and one 'recovered'. For the REA, the one patient to receive salvarsan was discharged 'relieved'. Of the seven to receive tryparsamide, four died, one was 'relieved', one 'recovered', and one 'not given'. And of the ten patients receiving malaria, one was discharged 'recovered', two 'relieved', and seven died.

Conclusion

The late-nineteenth century has been seen as a crisis period for physicians.[313] The primary objective was palliation and general support for the organism (including 'feeding up' and nursing support). Specific therapies and 'magic bullets' were rare. The nineteenth-century prestige of the physician rested not upon his improved ability to cure, but rather to understand disease and to establish an accurate prognosis. Nineteenth-century physicians thus looked towards the Viennese doctrine of 'therapeutic nihilism', the view of Joseph Skoda (1805-81) and Carl Rokitansky (1804-78), that doctors did far better in investigating basic disease mechanisms than in curing.[314]

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[313] See, for example, M. Vogel and C. Rosenberg (eds), *The Therapeutic Revolution* (Philadelphia, University of Pennsylvania Press, 1979).

[314] E. Shorter, 'The History of the Doctor-Patient Relationship', in W. Bynum and R. Porter (eds), *Companion Encyclopedia of the History of Medicine*, volume two (London and New York, Routledge, 1993), p.791.

However, in keeping with early twentieth-century developments in other medical specialties, neurosyphilis was revolutionised in this period. Triumphalist accounts were common in the years after the introduction of malarial therapy, and have persisted in historical writings to the present day. Its undoubted practical effects upon neurosyphilis made it a strong advertisement for the efficacy of modern psychiatric treatment. As such it was actively promoted by the Board of Control in the face of some initial reluctance among alienists. In many senses it can be regarded as the first of the heroic physical treatments of the twentieth century, although such a concept was not explicitly discussed until the Second World War.

Such were the changes and perceived advances that have taken place, particularly during the period from 1900 to 1930, in the treatment of neurosyphilis that the literature contains many reflections on the significance of this period. George Robertson remarked that, in the 1880s, two-thirds of the males admitted to asylums between 35 and 50 years of age suffered from GPI, with no known cause and no form of treatment to check its fatal course. Fifty per cent of those affected by it died within one year; 75 per cent within two years, and 90 per cent within three years of its recognised onset.[315] By 1930, in stark contrast, physicians knew its cause, could predict its development and, by treating it in the early stages, could stay its course and return the patient to work. Although there were significant therapeutic developments in neurosyphilis during this fifty-year period, these developments merged into one another and were often combined, rather than one therapy being simply discredited and discarded with the introduction of another. If there were any 'therapeutic revolutions', these involved the transitions between the ideologies of non-specific and specific therapies. However, even these were often combined, so that the term seems inappropriate here. And yet, as the statistical findings on the number of Scottish neurosyphilitics treated and cured reveals, as with the previous chapter on the effectiveness of the laboratory in diagnosis, the published comments of physicians on the efficacy of these therapies lie in stark contrast to the case note findings.

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[315] 'Mental Treatment: Progress in Asylum Methods', *Royal Edinburgh Asylum Presscuttings Book*, volume 7, 23 February 1926, LHB7/12/7, p.404.

Causation factors are vital and integral to an understanding of medical conceptions and constructions of disease. In the late-nineteenth and early-twentieth centuries, the aetiology of GPI was being reframed as a consequence of social and scientific change. Alienists developed a complex concept of GPI involving many causal pathways, relating the disease to the Victorian themes of degeneration, heredity and civilisation. This chapter will contextualise medical ideologies within the broader social concerns of the period, and argue that GPI became related to an 'immoral' lifestyle long before its relationship to venereal disease had been firmly established.

The Aetiological Factors of GPI in Scotland

Disease causation within psychiatry was conceived as an interplay between varying predisposing and inducing factors. The REA and Woodilee asylum case notes reflect this, dividing causation into separate *predisposing* and *exciting* columns, that is, the longstanding and more recent aggravating causes of illness. However, Gartnavel and Rosslynlee do not, so that a uniform comparison for all four asylums is not possible. **Table 7.1** displays the main recorded causes of GPI admissions to the REA in the period from 1880 to 1930, dividing these to replicate the structure of the case notes. This information was supplemented with space on the proforma to note details of the patient's *disposition*, *habits*, *previous bodily illnesses*, any *previous admission* to the asylum, and any *hereditary propensity* to madness. Looking at the case note causes, it can be seen that the majority of general paralytics were assigned 'unknown' causes. However, the rest of the case note information, the annual reports and published work of the alienists, supplements this information, to allow us to reconstruct alienists' epistemologies of the GPI aetiology.

Table 7.1 REA Predisposing and Exciting Causes of GPI, 1880-1930

	Predisposing (%)	Exciting (%)
Unknown	194 (61%)	160 (50%)
Syphilis	31 (10%)	30 (9%)
Alcohol	16 (5%)	50 (16%)
Heredity	44 (14%)	1 (0%)
Physical Disease	9 (3%)	15 (5%)
Brain Disease	7 (2%)	28 (9%)
Shock/Grief/Stress	20 (6%)	24 (7%)
GPI	0 (0%)	13 (4%)

n=321 Source: *REA Case Books*, 1879-1931, LHB7/51/34-120.

As **Table 7.1** illlustrates, the most significant known predisposing factor in the case notes was heredity, a factor that will be discussed more fully below. Syphilis was close behind. However, it was alcohol that was deemed the most significant exciting cause. Alienists were never explicit in explaining how exactly they decided whether a causal factor was 'predisposing' or 'exciting' to the onset of GPI. It is interesting to note that, despite the growing acceptance of the syphilitic hypothesis and the impact of the Wassermann test on diagnosis, the suggestion of syphilis within the REA case notes actually diminished over the period (see **Appendix 11** for a comparison between pre-1910 and post-1910 causation). Only the factor of 'unknown' was noted more in the period after 1910, for reasons that are frustratingly unclear. Each of the above factors will be discussed more fully below.

Summaries of alleged causes of insanity were an obligatory element in annual reports of this period, usually dividing causation into moral and physical factors. 'Moral' included mental overwork, anxiety and shock; while 'physical' included bodily illness, alcoholism, senility and heredity. Before the widespread acceptance of the hypothesis that GPI was syphilitic in origin, numerous concepts were elaborated to explain the aetiology. Although GPI's aetiology was complex and fluid, it was consistently founded upon excesses and moralistic judgements falling broadly into two categories. The 'moral' group included factors involving domestic

trouble, worry and love affairs whilst the 'physical' emphasised alcoholism, sexual excesses, venereal disease, and over-exertion.[1]

A more crucial aspect of causation was the fact that an initial cause or causes were assigned to the patient in the admission register (usually elicited from the patient, his family, and family physician, where he could afford one), followed by the case note causation column being completed by the admitting physicians. These causes often differed. Such information is available for Gartnavel, Rosslynlee and Woodilee, and is displayed in **Table 7.2**.[2] Clearly, 'unknown' is again a significant factor in both register and case notes, although the asylum physicians were more likely to ascribe a cause to the illness than general practitioners were. There are several other differences to observe between the two sources. Of particular note, 'syphilis' was ascribed far more often by the alienists, and 'brain disease' and 'GPI' a little more. The other factors were fairly constant, so that it is interesting to note the increase in cases deemed to be syphilis-related. This is partly accounted for by the use of the Wassermann test in the asylums from 1909 onwards, plus the growing acceptance of syphilis as a factor of causation in GPI, motivating and enabling alienists to look more rigorously for proof of syphilis. While patients' families genuinely might be unaware that their relative had syphilis, admitting physicians were more able to recognise the signs or diagnose it through the laboratory. They were also looking for such evidence, which the family would be very unlikely to be. For those who could afford their own family physician, there is also the possibility that the family or patient knew of the syphilitic infection but were too ashamed to admit it to the doctor. They might have been more likely to admit it once the extent of the patient's illness had forced asylum committal. Clearly venereal disease was shameful, and not easily discussed by either the patient or his family due to the

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[1] T. Tennent, 'An Investigation into the Value of Tryparsamide in the Treatment of General Paralysis of the Insane', M.D. thesis, University of Glasgow (1930), p.2.

[2] Water damage to some REA Admission Registers does not permit it to be included in the comparison. The total sample patient population here is actually 546, yet the number of admission and case note causes included in this table is 551 and 576 respectively. This is because a small number of patients had numerous causes assigned to them rather than a single cause, so that percentages in themselves are slightly misleading.

stigma it might attract. Alcohol was also noted a little more often by alienists than in the Register, which might also be accounted for by some of the above reasons. One final cause in need of explanation is 'GPI' – although a diagnostic label, a number of Admission Certificates, Admission Register and Case Note causation columns included 'GPI' as a cause as well as a diagnosis.

Table 7.2 Admission Register and Case Notes Causes of GPI in Gartnavel, Rosslynlee and Woodilee, 1880-1930

	Admission Registers (%)	Case Notes (%)
Unknown/Not Given	427 (78%)	298 (55%)
Syphilis	13 (2%)	89 (16%)
Alcohol	17 (3%)	39 (7%)
Heredity	6 (1%)	7 (1%)
Physical Disease	15 (3%)	21 (4%)
Brain Disease	12 (2%)	29 (5%)
Shock/Grief/Stress	35 (6%)	38 (7%)
GPI	26 (5%)	55 (10%)

n=546
Sources: *Glasgow Royal Asylum Register of Lunatics*, 1871-1963, GGHB13/6/78-80; *Glasgow Royal Asylum Case Books*, 1880-1930, GGHB13/5/62-194; *Register of Discharges and Removals*, 1874-1942, LHB33/6/1-2; *Rosslynlee Case Books*, 1880-1930, LHB33/13/5-36; *Barony Parochial Asylum Register of Admissions*, 1875-1957, GGHB30/10/1-4; *Barony Parochial Asylum Case Books*, 1880-1930, GGHB30/4/1-63 & GGHB30/5/1-61.

Appendix 12 provides a comparison between pre-1910 and post-1910 recorded causes of GPI in the three asylums. As we might expect, alienists in the latter period were more likely to ascribe a cause of insanity to the disorder, although the admission registers show the reverse trend. In most cases, this is because the post-1910 case notes have far more likelihood of recording syphilis as *the* or *a* cause of GPI. There are no particular differences regarding the other causation factors, particularly comparing the case note columns.

It was a common belief that the excessive use of alcohol and tobacco might produce GPI. This was evidenced in the Scottish asylum case notes. William N., a 37 year old partner in a Steam Laundry Company admitted in April 1918, had 'drunk heavily for several years'.[3] John T., a 40 year old married joiner admitted in October 1892, was: 'Fond of a dram.'[4] Alexander I., a 45 year old single labourer, admitted in February 1894: 'Got drunk every pay night …'[5] James N., a 33 year old married marine engineer admitted in February 1908, was 'a very heavy cigarette smoker, consuming as many as 100 cigarettes a day: in fact the steward had to be induced not to supply him with tobacco'.[6] Elizabeth S., a 39 year old married housewife admitted in September 1930, 'was teetotal but smoked about fifteen cigarettes a day until two years ago when she gave it up'.[7] William I., John Y. and Alexander M. 'did not drink to excess, but smoked'. Smoking was often linked to a generally degenerate lifestyle. Most obviously, Captain James O., a 44 year old married master mariner admitted in October 1910, 'smokes a good deal, and became notorious in Dover for "misconducting himself" with two of his nieces', the 'misconducting himself' referring to sexual intercourse, as it transpires in the case notes.[8]

Smoking and alcohol were woven into the identity of GPI as a disease associated with immorality, promiscuity and excess. Case note histories, particularly those of the poorer male patients, often document a generally debauched history of such excesses as alcohol, tobacco, and sexual promiscuity, idleness, and even atheism. Robert M., a 32 year old married solder admitted in April 1892, was: 'Given to drink and women (own statement)'.[9] William B., a 33 year old married labourer admitted in July 1891, was: 'Alcoholic [and] idle'.[10] Similarly, John L., a

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[3] *Glasgow Royal Asylum Case Book*, GGHB13/5/145/233.
[4] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/12/15.
[5] *Ibid.*, LHB33/13/12/118.
[6] *Glasgow Royal Asylum Case Book*, GGHB13/5/138/148.
[7] *Ibid.*, GGHB13/5/190/839.
[8] *Ibid.*, GGHB13/5/139/530.
[9] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/11/196.
[10] *Royal Edinburgh Asylum Case Book*, LHB7/51/54/603.

43 year old married carter admitted in May 1891, had been: 'Drunken for eight years, idle for many years'.[11] Alexander H., a 63 year old married housepainter admitted in May 1888: 'Married a strong young woman when he was 50 years of age. Excessive sexual indulgence is very probable in this case.'[12] Excess could even take the form of tea drinking. James G., a 38 year old married bottle blower admitted in October 1913, 'was a great tea drinker, drinking it to excess'.[13] Although Robert G., a 67 year old single silversmith admitted in November 1924, was only a moderate drinker: 'He has always been rather an agnostic.'[14]

The person most at risk of GPI was thus 'the vigorous city worker, making more money in good times than his education and social requirements can utilize for his legitimate enjoyments'.[15] The temptations of the city – excess, fast living and the resulting mental strain – were the professed causes in many cases admitted to the four Scottish asylums between 1880 and 1930. For example, William N., a 43 year old married fireman admitted in February 1899, 'drinks a bit. Has apparently lived a fast and free life'.[16] John C., a 33 year old married plasterer admitted in August 1913, was described as a 'heavy smoker, does not drink to excess, admits "soft chancre", steady and industrious'.[17] Admitted in September 1891, 49 year old married messenger Alexander N.'s disorder was ascribed to 'ill health, supposed to be decrease of his business'.[18] Phrases like 'degraded life', 'debauchery' and 'sins of youth' were used. They were not explicitly sexual, but were unclear, mixing up drink, sex, debauchery, degeneracy, and atheism.

Despite the 'debauched' nature of a number of these patients, in terms of their disposition, the majority of REA general paralytics were described as bright and cheerful, sociable, quiet, intelligent and hardworking. However, there was a

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[11] *Ibid.*, LHB7/51/54/467.
[12] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/9/33.
[13] *Barony Parochial Asylum Case Book*, GGHB30/4/36/10.
[14] *Glasgow Royal Asylum Case Book*, GGHB13/5/186/595.
[15] *88th Royal Edinburgh Asylum Annual Report*, 1900, LHB7/7/10, pp.29-30.
[16] *Royal Edinburgh Asylum Case Book*, LHB7/51/71/829.
[17] *Ibid.*, LHB7/51/95/553.
[18] *Ibid.*, LHB7/51/54/727.

fundamental division between 'steady' and 'unsteady', or 'faulty' and 'correct'. There was an inbuilt notion of respectability here. Those with 'correct' habits were usually temperate, married non-smokers. They were also likely to fit a social profile – female or middle class. Those with 'faulty' habits usually referred in their consultations to an excess of some form, particularly relating to alcohol, and occasionally to tobacco or sexual intercourse. The patient was likely to be a working-class male, or a female prostitute.

James T., a 31 year old married carter admitted in October 1922, was admitted with GPI, the cause being:

> women and drink. He would spend all his money on drink. Pawned everything he could lay his hands on .... He also smoked heavily .... He is believed to have had venereal disease.[19]

Robert H., a 36 year old single miner admitted in June 1900, had 'always lived a fast life both as regards drink and girls'.[20] William D., a 43 year old married wholesale supply agent admitted in March 1928, combined a number of 'debauched' elements. He was a:

> Fairly heavy smoker - cigarettes. When younger he was a heavy drinker up till marriage. He had some thick times with his pals. His habits have been pretty wild apparently. There was another cause of trouble with father who objected to the late hours involved and consequent neglect of work. As regards women very probably he indulged himself in this direction as he did on alcohol but brother does not know definitely. There is a history in this case of a syphilitic infection when he was about nineteen or twenty years old, and that his blood still gave a positive reaction.[21]

John T., a 60 year old married unemployed male admitted in March 1895, was simply: 'Wild, dissipated, drunken &c',[22] while Alexander D., a 30 year old single sailor and labourer admitted in September 1898, had led a: 'Loose intemperate sailor

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[19] *Barony Parochial Asylum Case Book*, GGHB30/4/53/100.
[20] *Glasgow Royal Asylum Case Book*, GGHB13/5/186/573.
[21] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/16/325.
[22] *Royal Edinburgh Asylum Case Book*, LHB7/51/63/441.

life'.[23] Similarly, James C., a 33 year old single plain net manufacturer admitted in July 1911, was: 'Alcoholic and erotic'.[24] Only a few females were similarly described. Jane U., a 34 year old single lodging house keeper admitted in November 1883, had GPI because she had been 'leading a fast life'.[25] Margaret L., a 42 year old single domestic servant admitted in August 1891, was 'Happy go lucky - a rover - fond of men'.[26] Susan D., a 36 year old married housewife admitted in June 1897, was simply: 'Intemperate, immoral'.[27]

A number of general paralytics were, however, described as 'steady' and respectable. John E., a 39 year old married labourer admitted in December 1895, was: 'Steady at work and sober'.[28] Robert I., a 48 year old married ex-sergeant in the police force admitted in October 1918, 'was a teetotlar [sic], steady and well behaved'.[29] William S., a 48 year old single cashier admitted in May 1895, has the following statement in his history: 'There is no bodily condition to lead one to suspect syphilis, nor can any history of excesses of any kind be got from his friends.'[30] John I., a 43 year old married baker admitted in September 1883, was: 'Steady and regular, fond of literature (reading)'.[31] Alexander D., a 41 year old married newsagent admitted in April 1890, was: 'Temperate and industrious'.[32] James L., a 63 year old widowed carter admitted in August 1891, was: 'Sober, steady, good living'.[33] Mary E., a 40 year old married housewife admitted in March 1913, was: 'Non alcoholic. Clean in her habits'.[34] Robert S., a 41 year old married

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[23] *Ibid.*, LHB7/51/71/481.
[24] *Ibid.*, LHB7/51/91/757.
[25] *Ibid.*, LHB7/51/41/333.
[26] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/20/365.
[27] *Royal Edinburgh Asylum Case Book*, LHB7/51/68/541.
[28] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/14/61.
[29] *Glasgow Royal Asylum Case Book*, GGHB13/5/145/593.
[30] *Ibid.*, GGHB13/5/129/412.
[31] *Royal Edinburgh Asylum Case Book*, LHB7/51/40/550.
[32] *Ibid.*, LHB7/51/50/251.
[33] *Ibid.*, LHB7/51/54/699.
[34] *Barony Parochial Asylum Case Book*, GGHB30/5/34/40.

railway clerk admitted in October 1925, was 'strictly tee-total'.[35] Finally William E., a 59 year old married general manager admitted in August 1918, was a: 'Total abstainer; habits said to be correct'.[36] This particular patient was diagnosed initially with organic confusional insanity, and not until post-mortem was the GPI diagnosis arrived at. Perhaps since such a patient did not fit the social profile of the disease, he was not considered for the GPI diagnosis. In fact, a number of such 'steady' patients received a diagnosis of mania, melancholia, acute excitement, or organic brain disease on admission to these asylums, and their diagnosis of GPI was only given at post-mortem. Although a significant finding, the number of such patients was relatively small, so that this point should not be exaggerated.

Even for those patients who were of upright character, the disease would change their character for the worse. The wife of John N., a 38 year old miner admitted in October 1904, reported that: 'He was always a steady worker, a temperate and most respectable man. Total abstainer for many years lately.' However, following a pit accident, his conduct, physical and mental health deteriorated rapidly: 'Ever since the accident he was slightly depressed', and would 'come back in the evening and tell his wife without any sense of shame that he had been with half a dozen prostitutes'. His wife said that he seemed to have 'lost all sense of decency and talked in the silliest fashion about his relations with the prostitutes'.[37] However, for those patients considered to be 'steady' in character, the usual designated causes of their GPI were not syphilis, but worry, stress, fright, organic brain disease, injury or alcohol, most of these 'respectable'.

Finally, there were those patients whose history recorded a changeable past, often in relation to alcohol. Alexander I., a 42 year old married spirits salesman admitted in May 1898, has this statement recorded: 'His general mode of life was good up to the last twelve months when he has been drinking heavily'.[38] The case notes of James N., a 56 year old married teacher admitted in February 1907, record: 'In early life he drank heavily but has not taken any kind of drink for over six

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[35] *Ibid.*, GGHB30/4/57/32.
[36] *Royal Edinburgh Asylum Case Book*, LHB7/51/106B/37.
[37] *Ibid.*, LHB7/51/20/69.
[38] *Barony Parochial Asylum Case Book*, GGHB30/4/4/341.

years'.[39] Robert R., a 33 year old single bricklayer admitted in October 1911, has the following statement recorded: 'Until about a year ago patient was a constant tippler, dating from time of accident. Has stopped entirely for the last year. No sexual disorders'.[40] The fact, however, that at the time of admission these patients were 'correct' and 'steady' in their habits can still be reconciled with GPI by the following statement of REA Physician Superintendent Clouston:

> In some of my cases I formed the opinion that the seeds of the disease were sown many years before its actual development, and that the man in his prime suffered for the sins of his youth.[41]

A number of case notes for general paralytics contain family statements or letters giving an account of the patient's life and how they were believed to have contracted GPI. In the REA, a relative of Jane O., a 61 year old widow admitted in February 1903, gave such an account. Her son 'says his family always date the starting point of his mother's disease from a great strain she went through seven years ago. She nursed her daughter suffering from' rheumatic fever.[42] A body of literature explains this use of narrative by patients and their families to explain the randomness of disease and to comfort themselves. Human beings understand their experiences in and through the telling and hearing of stories. In matters of illness, the patient and his family often find inadequate meaning in the medical view, and so elaborate reconstructions of their experience in such a way that illness can be given a sensible place within it.[43] In psychiatric cases, the patient's history or 'story' tends to have less significance or less status, due to his limited memory and coherence.[44]

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[39] *Ibid.*, GGHB30/4/16/45.

[40] *Ibid.*, GGHB30/4/31/33.

[41] D. Skae and T. Clouston, 'The Morisonian Lectures on Insanity for 1873', *Journal of Mental Science*, 21 (1875), p.14.

[42] *Royal Edinburgh Asylum Case Book*, LHB7/51/80/473.

[43] See, for example, L. Churchill and S. Churchill, 'Storytelling in Medical Arenas: The Art of Self-Determination', *Soundings*, 1 (1982), 73-9; A. Kleinman, *The Illness Narratives: Suffering, Healing, and the Human Condition* (New York, Basic Books, 1988).

[44] For an excellent introduction to narratives within psychiatry, see S. Swartz, 'Shrinking: A Postmodern Perspective on Psychiatric Case Histories', *South African Journal of Psychology*, 26:3 (1996), 150-6.

However, the relative or close friend often takes over this role and pieces together their own story.[45] Patients and their relatives thus construct a history and aetiology of the illness that make sense to them. William D., a private 49 year old widowed retired sea captain (ship master) admitted in June 1892, had the following account given by his family:

> Illness dates from the time of his shipwreck off the coast of S. America. His vessel was run down and foundered quickly, and the patient lost his wife and three children who were on board and himself was rescued after having been some hours in the water. Afterwards he was worried by litigation resulting from the loss of his vessel, and an attempt to prove that the accident was due to his negligence, which is said to have been in no way the case. He gradually passed into his present condition.[46]

The case notes of John C., a private 40 year old married store owner admitted in October 1896, have this brief statement to account for his contracting GPI: 'Before his illness he had a good deal of business worry and indulged too much in alcohol.'[47] Most versions of the aetiology and history of an illness incorporate the events that have occurred in the patient's long-term or immediate past, locating ill-health within a web of stressful events and processes.

Although rarely the *sole* cause, there are some examples where syphilis is given as *a* cause of GPI. Alexander F., a 58 year old single ship's carpenter admitted in March 1909, 'lived a fast life, was markedly alcoholic, and 14 years ago contracted syphilis'.[48] James D., a 31 year old single ship's draughtsman admitted in December 1911, was 'apparently accustomed to sexual intercourse and even after he

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[45] However, it should also be noted that, since we only have access to such 'stories' through the medium of clinical records, the alienist and clerk are no less the teller of these tales, as they may omit parts, edit or alter the text to fit the proforma. Furthermore, patients are often unhappy with their own narratives, and seek help from a physician to better explain the situation. Brody calls this the 'joint construction of narrative'. Balint suggests that the doctor and patient co-author the story of an illness. They work together, sometimes as one and sometimes in conflict, to include what is pertinent and to exclude what is extraneous. See M. Balint, *The Doctor, His Patient and the Illness*, second edition (London, Pitman Medical Publishing Co. Ltd, 1968); H. Brody, '"My Story is Broken; Can You Help Me Fix It?": Medical Ethics and the Joint Construction of Narrative', *Literature and Medicine*, 13:1 (1994), 79-92.

[46] *Glasgow Royal Asylum Case Book*, GGHB13/5/127/298.

[47] *Ibid.*, GGHB13/5/130/438.

[48] *Ibid.*, GGHB13/5/139/54.

had contracted syphilis would return to his former habits, having heard that he could not be reinfected'.[49] The wife of Robert C., a 53 year old married physician and surgeon admitted in June 1920, deserted him, having been a 'restless, bad-tempered creature' who had time only for eating, drinking and pleasure. As a result, the patient blamed her for his contracting a venereal disease.[50] William I., a 34 year old married mason admitted in September 1930, 'talks freely of having had syphilis'.[51] John D., a 50 year old single managing director admitted in March 1902, had: 'Syphilis (his own confession) eight years ago'.[52]

Some, of course, denied syphilitic infection if it was suggested. Alexander Y., a 34 year old single watchmaker admitted in March 1919:

> says he has never had sexual intercourse in his life. He had several rubber preventatives in his pocket - says a man gave him them a week ago but he had no use for them.[53]

James C., a 53 year old married physician admitted in June 1920, was asked if he knew what GPI was, replying 'Yes! General Paralysis, I should think so.' On suggesting he apply it to himself, he denied all possibility, then said: 'Well I may have got it since I came in here: its damnable'.[54] For some, this particular cause was not conceived of. Robert N., a clergyman, admitted in 1901 with the cause being 'anxiety and brain work', had no mention of alcohol or syphilis in his case notes. His cause of insanity was elaborated on further within the case notes:

> For some years he has had a good deal of worry in connection with his church owing to the numbers diminishing through no fault of his own, but due to the migration of the population.[55]

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[49] *Ibid.*, GGHB13/5/141/72.
[50] *Ibid.*, GGHB13/5/147/149.
[51] *Ibid.*, GGHB13/5/190/844.
[52] *Royal Edinburgh Asylum Case Book*, LHB7/51/81/61.
[53] *Glasgow Royal Asylum Case Book*, GGHB13/5/146/241.
[54] *Ibid.*, GGHB13/5/147/149.
[55] *Ibid.*, GGHB13/5/134/77.

It may also be the case that the alienists did not note these factors as admitting causes because they would embarrass and stigmatise the family. Susan B., a 26 year old married ropeworker admitted in April 1930, did not pay to reside in Gartnavel but was considered to be a private patient. Even though her GPI was deemed to be congenital, the positive Wassermann test would place her in a shameful position, so that the patient's sister-in-law was not told of the patient's full state, but merely that 'her blood … [is]in a bad condition, but I did not go into any details'.[56] Alternatively, alienists might simply not conceive of syphilis and alcohol being applicable, since the particular social characteristics of a patient such as the clergyman did not fit their construction of the disease.

Possible miscarriages and the health of the patient's children were also considered to be indicative of neurosyphilis, even before the syphilitic spirochaete was discovered in the brain of neurosyphilitics. One example is Elizabeth N., a 48 year old married housewife admitted in November 1923, whose family history states:

> The important facts in her family history are that she has been married twice and has had no children by her second husband; and she had a miscarriage during the first year following her second marriage.

This appears to be taken as proof of syphilis.[57] The wife of William H., a 43 year old married blacksmith admitted in August 1917, 'does not admit having had any miscarriages – it is probable all the same that [her husband] has had syphilis'.[58] Likewise, John D., a 41 year old married marine engineer admitted in July 1917, had no children:

> but Mrs [D.] is careful to explain that this is not due to disease or other defect. She had a miscarriage, due, she says, to her stumbling as she hurried off a train after her husband.[59]

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[56] *Ibid.*, GGHB13/5/190/817.
[57] *Glasgow Royal Asylum Case Book*, GGHB13/5/184/420.
[58] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/30/64.
[59] *Glasgow Royal Asylum Case Book*, GGHB13/5/144/534.

On the other hand, Alexander N., a 49 year old widowed wine and spirit merchant admitted in November 1917, 'has six healthy children all alive, wife had no miscarriages'.[60] Similarly, James D., a 43 year old married wholesale supply agent admitted in March 1928, 'has three children all alive. No still births or miscarriages'.[61]

Clouston perceived GPI as a somatic disorder that could be triggered by 'brain exhaustion, irritation, excesses in drinking, sexual excess, over-work, over-worry, syphilis or injuries'.[62] In fact, as George Wilson, REA Assistant Physician, wrote: 'A course of reading on the aetiology of general paralysis would incline one to believe that there is no evil under the sun that may not sufficiently account for the onset.'[63] The idea of a necessary and specific cause, generally considered to be essential if one is to have a defined disease entity, is noticeably absent from accounts of GPI in this period. The various causation factors suggested were quite diverse, so that it is interesting that GPI was widely believed to be a definite disease entity *without* a definite single causation.

By the mid-nineteenth century, it was recognised that most general paralytics had 'loose' ways or immoral habits, indulging in alcohol, tobacco and promiscuous sexual intercourse. A significant phrase here is that used by Wilson: 'A busy, immoral life culminated in' GPI.[64] Although there seems to be a bewildering array of causes proposed for GPI in this period, most alienists combined notions of debauchery and strain in their causation concepts. Thus there was a degree of agreement between alienists on the causal factors. The divergence of possible causes should not be allowed to mask this fact. It was, rather, the hierarchy of causal factors that could not be agreed upon.

Alcohol was regarded as a significant cause of insanity by Scottish alienists in this period. According to Clouston:

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[60] *Ibid.*, GGHB13/5/145/54.
[61] *Ibid.*, GGHB13/5/186/573.
[62] T. Clouston, *Clinical Lectures on Mental Diseases* (London, J. and A. Churchill, 1898), pp.377-418.
[63] G. Wilson 'The Diathesis of General Paralysis', 1892, LHSA GD16, p.3.
[64] *Ibid.*, p.6.

> No one … denies that if alcohol is taken in sufficient excess there is no brain whatever, even the strongest, that can resist some bad mental effects, although they may not take the form of technical insanity.[65]

To a significant extent this concurs with broader European views, including Kraepelin and Bayle. However, there were some observers who differed. Obersteiner, Hirschl, and Fournier found only a low percentage of alcoholics among their neurosyphilitic cases.[66] Plant carefully recorded the actual amount of alcohol consumed by patients in a large clinic, and GPI ranked among the very lowest in percentage of alcoholics.[67] Tobacco was discussed much less in relation to insanity, particularly in Scotland. However, the world-renowned alienist, Krafft-Ebing, stated that the smoking of ten to twenty Virginia cigars might produce GPI,[68] with other experienced physicians such as Guislain and Voisin in agreement with him.

It appears that. from the time GPI began to be discussed as a clinical entity, distinct from other diseases, syphilis was regarded as a possible aetiological factor. Bayle gave it some consideration. He wrote:

> About a fifth of the patients which I have observed have indulged in venereal excesses and often have contracted syphilitic maladies. But the excesses of this kind, and the illnesses which follows it, are so frequent that I would not dare to include them among the predisposing causes of chronic meningitis.[69]

However, syphilis was not seen as a significant specific cause during the nineteenth century. Clouston saw syphilis and GPI as two distinct diseases, which he described in two separate chapters of his *Clinical Lectures.*[70] He wrote of syphilis as a distinct somatic disease, recognising the four forms of syphilitic insanity listed in chapter

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[65] T. Clouston, *Unsoundness of Mind* (London, Methuen, 1911), p.109.

[66] J. Moore, 'The Syphilis-General Paralysis Question', *Review of Neurology and Psychiatry*, 8 (1910), p.266.

[67] *Ibid.*, p.267.

[68] D. Leigh in C. Thompson (ed.), *The Origins of Modern Psychiatry* (Chichester, John Wiley and Sons, 1987), p.219.

[69] G. Zilboorg and W. Henry, *A History of Medical Psychology* (New York, Norton, 1941), p.538.

[70] Clouston, *Clinical Lectures*. See Lecture X (pp.354-79) for GPI, and Lecture XII (pp.419-36) for Syphilitic Insanity.

two. In 1883, Clouston, reflecting the views of most alienists, emphasised that there was no proof that GPI was syphilitic in origin, due, he claimed, to a lack of statistical evidence.[71] During a Medico-Psychological Society discussion in 1887, he insisted that there was no connection between the two diseases, and met with little opposition. Whilst Thompson suggests that this denial, 'in face of mounting evidence', was due to his being 'raised in the heyday of Victorian prudery',[72] and was a result of his strict Calvinist upbringing, Clouston's claimed reason was pragmatic - a lack of statistical evidence to support what was still regarded as a major reformulation of the syphilitic domain. I would suggest that Thompson is overstating the point, and that Clouston was in fact fairly representative of fin-de-siècle alienists. In fact, most alienists were suggesting a multitude of causes for GPI in this period, and Clouston's speculations appear no more inaccurate than do his contemporaries'. After all, there were few statistical surveys, no diagnostic tests to identify syphilis, and no findings of the spirochaete in the brain of general paralytics. Furthermore, Clouston did recognise that syphilis could be a predisposing factor in GPI.

At first, syphilis was generally regarded as predisposing to GPI rather than actually causing it. Gartnavel Physician Superintendent Yellowlees stated that he was glad that Mott did not regard syphilis as an essential and invariable cause of GPI, but only as a very frequent cause. He fully agreed with this view.[73] And by the 1890s, REA Physician Superintendent George Robertson:

> maintained that syphilis was by far the most important aetiological factor [but] that it was not an absolutely essential factor. [He insisted] that there must be some other factor introduced to account for the phenomena of the disease.[74]

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[71] *Ibid.*, p.379.

[72] M. Thompson, 'The Wages of Sin: The Problem of Alcoholism and General Paralysis in Nineteenth-Century Edinburgh', in W. Bynum, R. Porter and M. Shepherd (eds), *The Anatomy of Madness: Essays in the History of Psychiatry*, volume three (London and New York, Routledge, 1988), pp.329 & 335.

[73] W. Ford Robertson, 'Discussion on the Pathology of General Paralysis of the Insane', *British Medical Journal*, 2 (1903), p.1068.

[74] *Ibid.*, p.1069.

In 1902, the viewpoint of the American alienist, Hurd, seemed akin to that of Oswald, the Physician Superintendent of Gartnavel, in the 1910s. He felt that although syphilis was the most common cause of GPI, it was rarely the sole cause, but was associated with mental stress, over-excitement, alcoholism and heredity. In fact, in a small number of cases, such causes as stress and overwork were still considered to be the sole ascertainable cause.[75]

Several terms began to be used from the late ninteenth century – parasyphilis, metasyphilis, and pseudo-GPI – to link GPI to a syphilis aetiology without alienists actually having to fully commit themselves. **Appendix 13** elaborates on the use of these terms. A further development in the acceptance of the link between syphilis and GPI was the 'toxin theory' developed in the early twentieth century, which viewed a microbe or bacillus as the cause of GPI (see **Appendix 14** for a fuller history of this theory). This theory is particularly important within the Scottish history of GPI, for the key figure involved in developing this theory was the Edinburgh pathologist W. Ford Robertson.

As late as the 1920s, the given causes of GPI in the Scottish asylum admissions continued to include such diverse factors as alcohol, bereavement, general paralysis, kick from a horse, lowness of system, overwork, religious mania, time of life, war strain, and a significant number of 'unknown origin'. Mention of syphilis continued to be the exception rather than the rule. For example, in the REA, syphilis was never commonly noted throughout the period until 1930. However, in the Woodilee case notes, from 1914 onwards, syphilis became much more significant in the case note causation columns than it had been before. Despite being a district asylum, Woodilee seems to have accepted the syphilis hypothesis of GPI far more quickly and uniformly than the other asylums in the study, and often listed syphilis alone as the cause of the disorder, unlike the usual 'multiple causes' approach of most institutions in this period. Although the reason for this is unclear, it possibly relates to the district asylums being quicker to incorporate new theories and activities into their regimes. Similarly, Gartnavel witnessed the same trend from 1918 onwards. In that year, syphilis became much more frequently mentioned in GPI

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[75] G. Davis, 'The Cruel Madness of Love: Syphilis as a Psychiatric Disorder, Glasgow Royal Asylum 1900-1930', M.Phil thesis, University of Glasgow (1997).

case notes, the same year that service patients began to arrive in the asylum. This could partly be accounted for by the fact that soldiers were often linked to the disease, and to the debauched lifestyle that led to GPI. However, these were not the only patients to have this cause ascribed to them, for private patients were also admitted with syphilis.

By the 1920s, the consensus of opinion within European venereology appeared to favour the hypothesis of syphilis plus 'other determining factors such as alcohol, head trauma, and various other aspects of the swirl of civilization'.[76] Most early twentieth-century conceptions of GPI relied on the action of syphilis upon a nervous system weakened by the stresses of civilisation. Krafft-Ebing's often-quoted phrase 'syphilisation and civilisation' encapsulates this, a phrase which originated at the Moscow Congress in 1897.[77] These multiple causal pathways explained the fact that only a small proportion of syphilitics went on to develop GPI, and that GPI was rare in uncivilised countries while syphilis was not. Indeed, there were still many competent observers who, as late as 1927, stated that GPI could occur quite independently of any syphilitic infection – for instance, from head injury, alcoholism, or an erratic mode of life.[78] Thus, whilst the syphilis link lent new associations to GPI, it did not represent a wholesale revolution in causal ideas. Rather, it was incorporated into the traditional nineteenth-century framework. Multiple causal explanations for GPI were thus used well after the link with syphilis had been established.

The Broader Debate

Between 1880 and 1930, a noticeable pattern emerged in the Scottish asylum admission figures. The number of GPI diagnoses was increasing, particularly in

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[76] V. Fisher, *An Introduction to Abnormal Psychology* (New York, Macmillan Company, 1937), p.368.

[77] A. Diefendorf, 'Etiology of Dementia Paralytica', *British Medical Journal*, 2 (1906), p.747.

[78] D. Henderson and R. Gillespie, *A Textbook of Psychiatry for Students and Practitioners* (London, Oxford University Press, 1927), p.290.

Edinburgh and Glasgow. A general increase in GPI admissions was thought to reflect the fact that Britain had become more urbanised and prosperous and thus more vulnerable to the 'emotional volatility' of civilised life. The numerical increase in general paralytics was a source of interest and concern to Scotland's Lunacy Commissioners, and was thus analysed in their Annual Reports of 1875, 1895, 1901, 1906, and 1912.

Clouston explained this increase on a number of occasions. In his 1900 Annual Report, he remarked that:

> I cannot myself get over the conclusion that the excessive use of alcoholic stimulants during times of brisk trade and high wages has to a large extent been the cause of the undue amount of mental disease which we have been called on to treat this year.[79]

Consequently, any fall in the number of GPI admissions was attributed to 'lessened opportunity of drink and dissipation, or greater exercise of self-control, or a lessened excitement in the modes of life'.[80] Alienists could neatly correlate economic booms with rises in GPI admissions, despite later assertions that, with syphilis found to be the main causal agent, initial infection would often take ten or even twenty years to progress to the tertiary stage. In 1884, Clouston pointed out that in the first five years of his Physician Superintendency, from 1873 to 1877:

> mostly years of plenty and inflation of wages, we had 115 cases of General Paralysis sent here out of 1580 total admissions, or 7.3% of the whole. In the last five years, 1881-85, years of dull trade, and little money to squander, we had only 75 cases out of a total of 1667 admissions, or 4.5%.[81]

This he attributed to the 'enforced sobriety and better living of the present unprosperous years, as compared with the years of plenty and inflated wages' between 1873 and 1877, followed possibly by 'greater exercise of self-control, or a

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[79] *88th Royal Edinburgh Asylum Annual Report*, 1900, LHB7/7/10, p.21.
[80] *83rd Royal Edinburgh Asylum Annual Report*, 1885, LHB7/7/9, p.13.
[81] *Ibid.*

lessened excitement in the modes of life'.[82] In hard times Clouston believed that men spent less money on drink and prostitutes.[83] By the turn of the century, however, the disease was documented to be on the rise again. In 1903, Clouston noted GPI to have markedly increased, both in proportion to the population, and admissions into the Asylum, and also absolutely in numbers. 'It is unquestionably increasing in modern times in our cities, and this increase is a bad sign of our ways of life.'[84] It is unclear whether at least part of this increase was due to better diagnosis, more honest reportage by patients, families and doctors, or a greater willingness of families to institutionalise the afflicted. Whatever the reason, it was particularly alarming given that the REA had the highest proportion of general paralytics of any Scottish asylum.

The City as Pathogen

The structure of debate on the aetiology of GPI related to a broader discourse. The various elements relating to the social epidemiology of the disease link directly to broader discussions and concerns of this period, and reflect prevailing debate about degeneration and urbanisation, with their related concerns of heredity, racial poisons and 'excess'. The theme of excess was a common preoccupation of Victorian psychiatry. The problem of overwork was seen to have intensified during this period with the perceived demands and the deleterious effects of civilisation within the urban environment. Alcohol and sexual excess were also routinely mentioned in connection with many forms of insanity in this period, evils which featured in wider discussions of degeneration and racial decay. Syphilitic infection and alcoholism were identified as steadily increasing conditions, since modern urban life enhanced both promiscuous sexual behaviour and the temptations and supply of alcohol. In these ways, GPI was constructed as a disease of the city, for 'its occurrence is very

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[82] *Ibid.*

[83] Thompson, 'The Wages of Sin', pp.326-7.

[84] *91st Royal Edinburgh Asylum Annual Report*, 1903, LHB7/7/11, p.18.

closely connected with modern developments of civic life'.[85] Or, as a *Lancet* writer stated, 'the refining influences of civilisation had not been altogether an un-alloyed boon'.[86]

The concept of 'diseases of civilisation' was first discussed during the eighteenth century. The rapid industrial and urban processes of late eighteenth-century Britain focused greater attention on the interface between sickness and society. The spread of big city life was apparently making populations more vulnerable, not merely to 'filth diseases', but to new modes of ailment created by modernity: hysteria, hypochondria, chlorosis, and their nineteenth-century neuropathological successors, like neuralgia and neurasthenia.[87] Indeed, it was in the nineteenth century that the notion of 'diseases of civilization' attained its greatest credibility. This was partly because certain disorders that fell under the epithet's umbrella grew more deadly; above all, tuberculosis, which reached its height around the mid-nineteenth century, accounting for up to a quarter of all urban deaths in north-western Europe.[88] In his study of cholera in mid-nineteenth-century America, Rosenberg notes that contemporaries regarded urban life as inherently dangerous, a fear that he recognised to be similarly widespread throughout Britain and the Continent.[89] 'The growth of civilization', as the London *Times* noted in 1868:

> means the growth of towns and the growth of towns means ... a terrible sacrifice of human life .... The fact is that in creating towns, men create the materials for an immense hotbed of disease, and this effect can only be neutralized by extraordinary artificial precautions.[90]

Within psychiatry, 'civilisation' was a prominent factor in debates throughout the later nineteenth and early twentieth centuries. The deleterious effects of

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[85] 'Insanity and Degeneration', *Royal Edinburgh Asylum Presscuttings Book*, volume 6, 27 February 1906, LHB7/12/6, p.76/20.

[86] 'The Physically Deteriorating Influences of Civilisation', *Lancet*, 1 (1887), p.1248.

[87] R. Porter, 'Diseases of Civilization', in W. Bynum and R. Porter (eds), *Companion Encyclopedia of the History of Medicine*, volume one (London, Routledge, 1993), p.592.

[88] *Ibid.*

[89] C. Rosenberg, 'Pathologies of Progress: The Idea of Civilization as Risk', *Bulletin of the History of Medicine*, 72 (1998), p.715.

[90] *Ibid.*

civilisation within the urban environment were commonly noted in Scottish case notes and annual reports of this period. The continual process of too sudden an adaptation to new environments and new conditions constituted, in Clouston's opinion, one of the great causational factors of criminality, as well as certain forms of insanity.[91] As more and more people moved to the cities:

> where the brain cells are continually being stimulated and new impressions being made on them every minute of life, more rest and sleep is needed than in the old quiet country life.[92]

Clouston added:

> If mental disease is largely the penalty of the faults of civilisation, as it unquestionably is, then it is the clear duty of that civilisation to apply its best resources to undo and mitigate the evil that has mingled with its good.[93]

Asylum treatment for the insane was based on the notion that the insane could be healed only if they could be separated from the damaging influence of their environment. Thus Clouston claimed that a public asylum for the insane was 'one of the recognised parts of our complicated modern civilisation'.[94]

Neurasthenia was held up as a prime example of psychiatric disorders of civilisation. The concept of 'neurasthenia' as a discrete disease entity had been introduced by the American neurologist, George Miller Beard (1839-1883), who in his first monograph on the subject had postulated an aetiological link between modern life and the occurrence of the disease.[95] GPI was another form of insanity widely conceived to be caused or at least exacerbated by the realities of urban industrial society. In fact, Clouston held it to be 'the most terrible of all the modern

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[91] T. Clouston, 'The Developmental Aspects of Criminal Anthropology', 1894, LHSA GD16, p.221.
[92] T. Clouston, 'Health of Body and Soundness of Mind: A Lay Sermon', 1903, LHSA GD16, p.18.
[93] *74th Royal Edinburgh Asylum Annual Report*, 1886, LHB7/7/9, p.16.
[94] *80th Royal Edinburgh Asylum Annual Report*, 1882, LHB7/7/8, p.23.
[95] V. Roelcke, 'Biologizing Social Facts: An Early Twentieth Century Debate on Kraepelin's Concept of Culture, Neurasthenia, and Degeneration', *Culture, Medicine and Psychiatry*, 21:4 (1997), pp.384-5.

diseases of modern life'.[96] The geographical and racial distribution of GPI was believed to throw light upon the aetiology of the disease. GPI prevailed in some places and in some races, but was, it was claimed, unknown in others:

> the Asiatic is not subject to it, the savage is free from it, and the Irishman and Scotch Highlander needs to come to the big towns or to go to America to have the distinction of being able to acquire it.[97]

Of those patients diagnosed with GPI, a tight pattern thus emerged in the minds of the clinicians – GPI was rare among the uncivilised races and rife in the highly civilised nations, with large towns and manufacturing centres furnishing most cases of the disease.

The favourite habitat of the disease was seen as strongly corroborative of its moral origin. In Scotland, Clouston referred to GPI as the disease:

> most closely connected with the special overwork and with the special vices of our modern civilisation .... In the Highland Asylums it is practically unknown, and in Ireland it is the rarest thing to meet with a case. But when the Highlander and the Irishman come to Glasgow and Edinburgh, and work hard, eat flesh meat, have too little fresh air, drink much impure liquor, and live a bad life, they become subject to this disease just as readily, in my experience, as the Englishman and the Lowlander.[98]

Similarly, the General Board of Commissioners noted:

> If we look at the proportion of deaths from General Paralysis to the total death-rate of the Royal and District Asylums which draw their population mainly from the large cities of Aberdeen, Dundee, Edinburgh and Glasgow, it will be seen that the proportion to the general death-rate of male patients in these asylums ranges from 19.8 in the Glasgow Royal Asylum to 28.2 in the Edinburgh Royal Asylum. In another class of asylums which draw their population chiefly from smaller urban communities and from mining districts, the range is from 20.2 in the Midlothian Asylum to 12.0 in Murray's

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[96] *80th Royal Edinburgh Asylum Annual Report*, 1892, LHB7/7/10, p.14.

[97] T. Clouston, *Mental Diseases*, fifth edition (London, J. and A. Churchill, 1898), p.379.

[98] *71st Royal Edinburgh Asylum Annual Report*, 1883, LHB7/7/9, p.20.

> Royal Asylum; while in asylums having a population of a purely rural character, the range is from 5.8 in the Inverness District Asylum to 7.9 in the Elgin District Asylum.[99]

Such statistics threw 'a lurid sidelight on some of the dangers of city life'.[100] In contrast to the asylums of Edinburgh and Glasgow, Inverness District Asylum boasted the fewest paralytics of all the Scottish asylums. As the 1888 Annual Report stated:

> There is, perhaps, no feature more remarkable in the history of this Asylum than the infrequency of General Paralysis of the insane .... It is also remarkable that this disease has not been found in patients who have never left their native glens, but only in those who have resided in large towns, and been exposed to the vices of civilisation, of which it appears to be the product.[101]

As this asylum further noted of its few general paralytics:

> All those patients, indeed, who have succumbed to nervous disease, have either lived in the great centres of activity or in conditions in total contrast to the original mode of life. One, a general paralytic, had been a cab-driver in Glasgow.[102]

The asylums of Edinburgh and Glasgow do not afford much opportunity to compare and contrast the proportion of urban and rural general paralytics, since their patient populations were predominantly composed of city-dwellers. For example, most of Gartnavel's patients came from Glasgow and its immediate surroundings. Apart from a handful of patients who came from further afield (including Gourock, Belfast and Liverpool) - and even then these were from urban centres - all neurosyphilitic patients came from Glasgow or its outskirts (including Mossend and

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[99] *38th Commissioners of Lunacy for Scotland Annual Report*, 1896, GGHB13B/14/64, p.liii.
[100] *89th Royal Edinburgh Asylum Annual Report*, 1901, LHB7/7/10, p.14.
[101] *24th Inverness District Asylum Annual Report*, 1888, HHB3/8/10, p.12.
[102] *21st Inverness District Asylum Annual Report*, 1885, HHB3/8/10, p.13.

Rutherglen). This pattern is replicated in the other three asylums, making a study of rural paralytics unfeasible.[103]

Degeneration and Heredity

Degeneration was a European reaction to urbanisation, industrialisation, and the democratisation of political life. The classic clinical description of degeneracy is that of the alienist Valentin Magnan, who in 1895 defined it to be:

> a pathological state of the organism which, in relation to its most immediate progenitors, is constitutionally weakened in its psycho-physical resistance and does not realize but in part the biological conditions of the hereditary struggle for life. That weakening, which is revealed in permanent stigmata, is essentially progressive, with only intervening regeneration; when this is lacking, it leads more or less rapidly to the extinction of the species.[104]

The 'constitutional weakness' to which Magnan referred lowered the resistance of the victim's will, exposing him to a wide variety of dangers, both biological and social. In the middle of the nineteenth century, French physician and alienist Benedict-Augustin Morel published several works that drew together physiological, psychiatric and anthropological ideas on the decline of the race into an overarching theory of physical and moral degeneracy or 'degenerescence'. Morel characterised degeneration primarily as a physical problem, relating to bad heredity. He claimed that 'the degenerate' represented the 'morbid deviation from the primitive human type'.[105]

Pick argues that the concept of degeneration was a generalised 'discourse' that transcended national and professional boundaries. The idea of degeneration

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[103] Only one REA neurosyphilitic in the sample was from Orkney. Had there been more Orcadians, this would have made an interesting comparison to those patients from the city of Edinburgh.

[104] R. Nye, 'Degeneration, Neurasthenia and the Culture of Sport in Belle Epoque France', *Journal of Contemporary History*, 17 (1982), p.56.

[105] Cited in M. Spongberg, *Feminizing Venereal Disease: The Body of the Prostitute in Nineteenth-Century Medical Discourse* (London, Macmillan, 1997), p.1.

cannot be 'reduced to a fixed axiom or theory', he writes, or to any 'single cause or origin'.[106] Degeneration was important less for its verifiable content than for its capacity to articulate diffuse belief in cultural decadence, and alarm at the social forces that seemingly threatened the delicate mental and physical health of Europeans in the later nineteenth century. And it was precisely because of its power to express anxieties about the political future of European nations and to resolve them by recasting them in less traumatic naturalistic terms that the theme of degeneration persisted well into the twentieth century.[107]

One of the major intellectual changes characterising the late nineteenth and early-twentieth centuries was the growth of social Darwinist thought. There were a great many varieties within this species of thought, but two main aspects were the preoccupation with external racial and national competition, and the concern with the proliferation of the working class, especially its more improvident members, at the expense of the better stocks. The concept of a hierarchy of races with the white man at the top had emerged long before Darwin popularised the theory of evolution. Europeans had almost invariably assumed that they were biologically superior to the races they were subjugating with their military technology. Darwin's theories merely supplemented and further justified such attitudes. The interbreeding of 'misfits' and 'profligates' – and it was widely assumed that the degenerate, driven by perverted sexual appetites and lacking self-control, would breed disproportionately – would lead, over the generations, to the swamping of the healthy by the residuum.

Moreover, by mid-century, the idea of degeneracy had begun to take hold in fields outside race biology – including medical pathology, psychiatry, and criminology. Lombroso founded a science of 'criminal anthropology' in which the criminal type was seen as a throwback to an earlier stage of evolution caused by a failure of growth.[108] It was also suggested that women represented a stage of growth lower than that of men. The fear was growing that degeneration within civilised

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[106] I. Dowbiggin, 'Review of D. Pick, "Faces of Degeneration: A European Disorder, c.1848-c.1918"', *Bulletin of the History of Medicine*, 64 (1990), p.488.

[107] *Ibid.*

[108] P. Bowler, *Evolution: The History of an Idea* (Berkeley, University of California Press, 1984), p.286.

peoples threatened civilisation itself. Racial stereotypes increasingly became a convenient concept for the projection of new social anxieties, and racial degeneration now became a part of a more general theory of 'morbid anthropology'. As Carlson records, Morel devised a theory that demonstrated the gradual degeneration of the human species.[109] Degeneration in the first generation would be characterised by a nervous temperament and a tendency toward cerebral vascular congestion, as well as irritability, quick temper and violent behaviour. The second generation ran the risk of illnesses of the central nervous system such as cerebral haemorrhages, epilepsy, and the neurotic disorders of hysteria. In the third generation, degeneracy manifested itself in the form of insanity. By the fourth generation: 'Infants were born with markedly reduced vitality, demonstrated a congenital weakness of their faculties and were sterile, imbeciles or idiots.'[110]

A number of diseases – including alcoholism, feeble-mindedness, and venereal disease – were quickly depicted as racial poisons, and threats to national health. In particular, alcoholism and syphilis were dubbed the 'twin racial poisons', as alcohol led to vice and vice to syphilis. A belief developed that the medical lines of demarcation between those who were sexually healthy (and by implication part of the respectable community) and the diseased, promiscuous and unrespectable, could intensify in a period of economic, political and cultural crisis. Viewing syphilis as divine retribution for the collapse of sexual and marital boundaries, doctors from the late-eighteenth century began to publicise the dangers of an epidemic, initiating the period which the French historian Alain Corbin has called 'the golden age of venereal peril'.[111] Conservatives were quick to seize upon the disease as a weapon in their fight to restore the values of chastity and monogamy.

An integral part of the degeneration debates was the importance of heredity. Nineteenth-century scientists generated theories of biological evolution proposing

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[109] Spongberg, *Feminizing Venereal Disease*, p.1.
[110] *Ibid.*, p.2.
[111] E. Showalter, *The Female Malady: Women, Madness and English Culture, 1830-1980* (London, Virago, 1996), p.188.

that human nature was shaped by heredity.[112] From the work of Bayle onwards, the influence of heredity in the causation of GPI received much attention. There were several theories of how exactly heredity was related to GPI. The REA Physician Wilson emphasised the importance of inherited tendencies of the individual, and put forward some arguments in favour of the hypothesis that 'general paralytics are born, not made'.[113] To make his case, he highlighted the enormous number and variety of alleged causes and the absence of any assignable cause in some cases of GPI, as well as:

> the trifling nature of many of these causes compared with the fatally progressive nature of the disease, so that one wonders if such conditions can possibly be held to account for the overthrow of a human brain were it of anything like a normal constitution.[114]

He also drew attention to the extreme rarity of the disease compared with the frequency with which the general population was exposed to one or several of the acknowledged causes. More specifically, another argument for the importance of the hereditary factor in GPI was the occurrence of the disease in very young subjects in whom the usual conditions for its development had not been fulfilled, and in whom 'one or both parents lived rather too freely'.[115]

However, the most simple and conclusive argument for Wilson's general paralytic 'diathesis' (meaning 'predisposition to') theory came from a fairly large number of cases in which the disease was manifestly 'a family affair'. Wilson had several cases of this kind at the REA. In particular, there was the 'remarkable case' recorded by Clouston and George Savage, one of the most enthusiastic British degenerationists, of GPI in twin brothers. Clouston gave the following account of the case:

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[112] I. Loudon (ed.), *Western Medicine: An Illustrated History* (Oxford and New York, Oxford University Press, 1997), pp.241-2.
[113] Wilson, 'The Diathesis of GP', p.3.
[114] *Ibid.*, p.5.
[115] *Ibid.*, p.9.

> Lately I had a general paralytic, and Dr. Savage has his twin brother, there being a strong family history of insanity, both men of the same temperament and disposition, viz., sanguine and keen, both being of very active habits, both indulging to great excess in wine and women, both following a similar occupation – an exciting one – and both being affected by the disease within a year of one another. Such a clinical history has never been put on record before, and it shows conclusively that the heredity may predispose to the disease.[116]

Such support for the 'hereditary' theory resulted in such strong case note statements as: 'The man was a general paralytic from his mother's womb.'[117] In fact, the REA case notes contain a significant number of general paralytics considered to have heredity as a causal factor. Between 1880 and 1930, my sample contains 44 patients (14%) who were considered to have some degree of hereditary propensity to madness.

Despite such hypotheses linking GPI to heredity, the majority of British alienists were reluctant to place GPI within the framework of hereditary neuropathy. The London physician Craig stated that:

> Heredity does not play a very important part in the causation of general paralysis, and a large percentage of these patients have no special history of nervous instability in their immediate relatives.[118]

He found that:

> General paralysis of the insane so far does not prove common among relatives; I have only found a few cases in each hundred, and in those there has often been general paralysis in a parent – usually the father – and in a daughter or son, in whom also we frequently find signs of hereditary syphilis.[119]

Clouston was even more clear in downplaying this aetiological factor:

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[116] *Ibid.*, p.7.
[117] *Ibid.*, p.14.
[118] M. Craig, *Psychological Medicine: A Manual on Mental Diseases for Practitioners and Students* (London, J. and A. Churchill, 1917), p.223.
[119] *Ibid.*

> [GPI] is, in fact, that form that is least dependent for its production on hereditary and unpreventable influences, and most dependent on controllable causes operating during the life of the individual.[120]

This seems strange, given that most of the REA general paralytics with heredity listed as a causal factor were admitted during Clouston's period of physician superintendency. It is possible that alienists simply listed within the 'causation' section of the case notes any factor relevant to the patient, even those they did not consider significant to the onset of the disease. However, in the published literature at least, for most alienists the heredity factor was no more significant to GPI than to any other form of insanity.

Gartnavel, Rosslynlee and Woodilee fit nicely into this framework, for in each the factor of heredity was considered marginal to the onset of GPI. Within the period from 1880 to 1930, of the 158 GPI cases admitted to Gartnavel, only 4 had 'heredity' mentioned as a potential case note case. 'Heredity' is not noted in a single GPI patient's admission documents. The 176 Rosslynlee GPI admissions had a similar proportion of heredity causes – 1 in the admission registers, and 3 in the case notes. Woodilee was slightly different, for of its 212 GPI admissions in this period, 5 in the Admission Register but none in the case notes had heredity noted as a cause. However, the 'causation' section of the case notes contained a further heading – HP, or heredity propensity to madness – and this contains a noticeably higher proportion of heredity than the causation sections. For example, in Gartnavel, 33 patients (21%) were noted to have any HP, that is, evidence of insanity or alcoholism in any family member. Similarly, Rosslynlee notes 25 (14%) GPIs to have HP, Woodilee 20 patients (10%), and the REA 59 (16%). The fact that this information was rarely copied to the 'causation' line of the proforma suggests that the Scottish asylums, despite rigorously noting this information elsewhere in the case notes, did not conceive it to be relevant to the onset of GPI.

The language used in this part of the case notes is noteworthy. It tended to be quite judgemental – for example, rather than the hereditary propensity section simply stating 'no HP', a common comment was 'denied' or 'none admitted', as though the

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[120] *73rd Royal Edinburgh Asylum Annual Report*, 1885, LHB7/7/9, p.13.

patient and his family were trying to hide a shameful secret. Such language is hardly neutral, and suggests that the alienist doubted the veracity of the patient, suspecting him to have indulged in behaviour that was morally or medically objectionable. In some cases, however, it was merely through the patient's lack of knowledge of their family, including Robert N., a 39 year old married labourer admitted in February 1922, for whom: 'There is no history of insanity on either side of his family but this is from ignorance of the informant.'[121] Particularly for the pauper patients, if a patient had no family or friends, their history was either short or entirely absent, such as William H. of Woodilee, a 48 year old single twister admitted in May 1911, who was noted to have 'no friends' as an explanation for his almost completely blank case notes admission pages.[122] The Royal asylums registered a higher rate of hereditary propensity. This higher level in the private patients is probably accounted for because their histories were more comprehensive, and thus this factor would be more easily detected.

Despite the fact that GPI was rarely accompanied by a hereditary propensity to madness, GPI was seen by some to constitute the classic Darwinian disease, and juvenile GPI in particular, caused by the 'hereditary taint' of the parent. Showalter sees GPI as the perfect Darwinian disease because it linked immoral behaviour to hereditary causes.[123] And even where the hereditary element was not seen as significant, the association between GPI, mental dissolution, sexual excess, and syphilis converged easily within this framework. The idea of degeneration was nebulous enough to reach far beyond the remit of hereditary theory. Such flexibility allowed GPI to be fitted quite effortlessly into the degenerative framework, despite the fact that it was predominantly associated with acquired syphilis rather than the hereditary disease. A number of alienists saw an epistemological relationship between GPI and urban or racial degeneration, and discussed it in these terms. In such circles, concern over GPI did not just coincide with contemporary discourses surrounding urban degeneration but was actively shaped by them.

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[121] *Barony Parochial Asylum Case Book*, GGHB30/4/52/64.
[122] *Ibid.*, GGHB30/4/30/12.
[123] Showalter, *The Female Malady*, p.111.

Physicians used language dramatically evocative of degeneration to describe the onset of neurosyphilis. Tabes dorsalis, for instance, was described as 'a slow process of decay and death of the intra-spinal portion of the sensory protoneurones'.[124] Indeed, Frederick Mott's description of GPI as the 'smouldering destruction of neural elements, the latter conflagration often fanned into flames by circulatory disturbances' could be described as apocalyptic.[125] GPI was in fact perceived to be rising out of proportion to the rest of insanity amongst both sexes at the turn of the century, and this intensified the apocalyptic images which were being increasingly applied to it. In 1896, the Scottish alienist Stewart published one of the most negative accounts of the disease written. The rise of GPI, he suggested, represented:

> a reversion to a lower and more hopeless form of brain disease, a diminishing vitality, a lessening power of resistance, and an increasing tendency to premature and rapid racial decay.[126]

Although he noted that hereditary influences were less prominent in GPI than in other insanities, his broader view of degeneration enabled him to blame drunkenness, sexual excess and moral decadence for a reduction in racial resistance, of which GPI was a prime manifestation. To Stewart, the individual history of the illness provided an appropriate metaphor for the deterioration of society: 'The opening chapter is moral decadence; the closing acutely rapid physical and intellectual degeneration and premature extinction.'[127]

Historians have turned to the shared stock of ideas about morality, sexuality and degeneration which both syphilis and insanity suggested to Victorian observers. Porter and Berrios speak of 'the late nineteenth-century obsession with GPI' which was conditioned to a large extent by growing fears of the consequences of unbridled sexuality: 'Sooner or later ... all who had committed youthful sexual indiscretions

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[124] Spongberg, *Feminizing Venereal Disease*, p.158.
[125] Cited in *ibid.*, p.158.
[126] R. Stewart, 'The Increase of General Paralysis in England and Wales: Its Causation and Significance', *Journal of Mental Science*, 42 (1896), p.774.
[127] *Ibid.*, p.776.

would pay the price by growing demented'.[128] In her study of Clouston, Thompson suggests that his ideas about GPI – 'an irrevocable consequence of "dissipated habits"' - came from the same stock of ideas as those about syphilis, despite his non-acceptance of syphilis as the cause of GPI, with his perception of such patients as 'diseased troublemakers' and deviants.[129] As Clouston stated, 'one must know that General Paralysis practically means certain forms of immorality'.[130] However, there seemed to be a quite pronounced disagreement between historians and contemporary physicians as to whether GPI was an actual disease of degeneration or not. Until the turn of the century, many accounts of degeneration made little mention of GPI; and it was rarely linked to fears of the urban residuum – the diseased, corrupt, and mentally indolent classes which threatened British society. This was a disease to which anyone – even a physician or priest - might succumb. Perhaps it is because of those teachers, solicitors, physicians and churchmen, not to mention the private patients in the Royals, that the four Scottish asylums tended not to discuss neurosyphilis in terms of degeneration. However, this lack of heredity in most Scottish accounts of GPI aetiology only made the disease more cruel: 'it robs the community of men and women in the prime of life untainted as a rule by predisposition to nervous and mental breakdown'.[131]

The Moral Agenda of Aetiology

The hypotheses put forward to explain the aetiology of GPI tell us a great deal about the concerns of the alienists themselves. Lacking a uniform understanding of the aetiological agent of GPI, contemporaries framed a picture of the disease that sought to reduce its threat of randomness, while simultaneously articulating their own social and cultural values. Thus GPI became related to an immoral lifestyle decades before the syphilis link was widely accepted. As Rosenberg asserts, explaining sickness is

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[128] G. Berrios and R. Porter (eds), *A History of Clinical Psychiatry* (London, Athlone, 1995), p.59

[129] Thompson, 'The Wages of Sin', pp.326 & 331.

[130] *89th Royal Edinburgh Asylum Annual Report*, 1901, LHB7/7/10, p.14.

[131] *Barony Parochial Asylum Annual Report*, 1902, GGHB30/2/12A, p.21.

too significant – both socially and emotionally – for it to be a value-free enterprise.[132]

The medical profession has been bound by oath to relieve suffering wherever possible, but willingness to do so might be modified by feelings rooted in other moral considerations. Doctors consciously or unconsciously absorbed prevailing values, and their medical judgements might be influenced by them.[133] Walkowitz asserts that the treatment of gonorrhoea and syphilis conformed to moral and sexual attitudes prevailing among the dominant classes of nineteenth- and early twentieth-century society:

> Because mercury application was very painful, it remained an appropriately punitive method of treating syphilitics ... likewise, the cauterization of male and female patients ... served a similar punitive and deterrent function.[134]

Alienists of the period were caught in the position of men whose society regarded venereal disease as just punishment for promiscuous sexuality and a metaphor for social decay. Asylum inmates with GPI were thus labelled with the double stigma of being mad and bad.

Doctors were placed in the difficult, even anomalous, role of curing the patient without passing moral judgment on his behaviour or sexual conduct. And yet, sin and sexuality were inextricably linked in the Scottish consciousness. Typical of many asylum case notes in this period, descriptions of patients, their symptoms and behaviour, were imbued with a moral tone of disapproval or outright disgust rather than factual and scientific language. It is interesting to note the judgmental attitudes in case note phrases like: 'He masturbates frequently, often shamelessly and continuously. He does not obey the calls of nature and is wet and dirty in his habits'. Patients could be described as 'filthy', 'wretched' or even 'animal'. Such phrases

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[132] C. Rosenberg and J. Golden (eds), *Framing Diseases: Studies in Cultural History* (New Brunswick and New Jersey, Rutgers University Press, 1992), p.xiv.

[133] J. Cassel, *The Secret Plague: Venereal Disease in Canada, 1838-1939* (Toronto, Buffalo and London, University of Toronto Press, 1987), p.100.

[134] J. Walkowitz, *Prostitution and Victorian Society: Women, Class and the State* (Cambridge, Cambridge University Press, 1980), p.55.

superbly illustrate the conflation of medicine and morality. GPI entangled the medical profession in moral issues of alcoholism, sexuality and prostitution.

The element of blame arose regularly in GPI debates. Clouston vehemently believed that good mental health was dependent on adherence to Victorian standards. Whilst willing to accept that factors such as urbanisation could have an adverse effect on health, his belief was steady that if the individual reacted to this by engaging in dissipated behaviour, he alone was responsible for the results. Hence GPI, 'like alcoholic insanity, must be regarded as a largely preventable scourge of humanity'.[135] From his arrival at the REA, Clouston sought to distinguish between harmful or self-destructive behaviour and that which was prudent and prophylactic. He wrote:

> To lessen materially in civilised societies the total amount of the great nervous disturbances … there are I believe only two great methods – (1) To live according to physiological and moral law; and (2) To arrange suitable marriages.[136]

In addition to personal behaviour recommendations, he advised against excessive study for the young, and deviance – dissipation, sexual excess and self-abuse. He stressed the relationship between a healthy mind and a healthy body. He furthermore stated:

> The highest mental quality of all is the will, which being exercised in the control of life means 'self-control', and that is the practical and important side of morals and religion.[137]

Good mental health, it seems, demanded strict adherence to the Victorian moral values of continence and self-control, with GPI epitomising this most clearly. Clouston was to preach openly on such matters as sexual relationships and alcohol consumption, making Gartnavel's comparative silence on such matters noticeable.

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[135] *90th Royal Edinburgh Asylum Annual Report*, 1902, LHB7/7/11, p.11.
[136] *87th Royal Edinburgh Asylum Annual Report*, 1899, LHB7/7/10, p.15.
[137] Clouston, 'How the Scientific Way', p.16.

Gartnavel Physician Superintendent Oswald did, however, have sympathies with the Eugenics Movement.[138]

Marriage was portrayed as the most significant and responsible prophylactic measure here.[139] Clouston's *Before I Wed* was a polemic aimed at young men and warning of the irrevocable relationship between sexuality and madness.[140] He stressed the importance of monogamous sexual relationships and virtuous marriage. He warned that if men indulged in masturbation, the habit would lead to drunkenness, liaisons with prostitutes, syphilis, and ultimately insanity.[141] Clouston echoed European views in this regard. At the international Brussels conference on syphilis in 1902, Professor Burlureaux declared that 'marriage is the most secure shelter against the venereal peril'.[142] In France, Alfred Fournier, a leader of the French movement to regulate and control prostitution, used the risk of syphilitic infection as:

> a perfect excuse to preach marital fidelity and family devotion, to insist on the importance of the sanitary regulation of prostitution, and to repress the working class, fantasmatically the ultimate source of all disease.[143]

Fournier demanded that all extra-marital relations should be made illegal, for if 'humankind returned to the golden age of innocence, the days of syphilis would be numbered'.[144]

Religion was occasionally mentioned explicitly within GPI and insanity texts. The fall of man was a potent image, as this Glasgow-based physician's writing, relating to syphilis, illustrates:

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[138] J. Andrews and I. Smith (eds), *'Let There be Light Again': A History of Gartnavel Royal Hospital from its Beginnings to the Present Day* (Glasgow, Gartnavel, 1993), p.62.

[139] Although this might be seen as ironic, given the statistical break down of the four asylum general paralytic populations – 1% divorced, 7% widowed, 28% single, and a significant 64% married.

[140] T. Clouston, *Before I Wed, or Young Men and Marriage* (Cassell and Company, London, 1913).

[141] Thompson, 'The Wages of Sin', pp.335-6.

[142] Showalter, *The Female Malady*, p.195.

[143] *Ibid.*

[144] *Ibid.* And yet, as he himself was only too well aware, marriage provided little protection against contracting the disease. In fact, Fournier's chief mission in life was to promote an understanding of the dangers syphilis posed, especially within marriage. See Fournier, *Syphilis and Marriage* (1880).

> God has fixed our being beneath stern yet beautiful laws, which ever bear their testimony to the obedience of virtue, and their witnessing judgment to the disobedience of vice. The man who walks in fellowship with the laws of virtue, will not only have the testimony of his conscience within him, but the witness of purity in his flesh, by the sweet harmony which will run through his physical constitution, holding in healthy balance all the functions of his body. But if he depart therefrom, discord and disunion will be set up in his system, with all the miseries of disease.[145]

Through their original sin, Adam and Eve brought disease and death into the world as punishments for disobedience. 'Health replaces salvation, says Guardia.'[146] If we see medicine within the context of the Fall of Man, then disease becomes man's punishment. In this regard, Clouston's significantly titled *Lay Sermon* of 1903, and his comment that doctors were 'priests of the body', seem particularly relevant.[147] As a scientist, Clouston felt able to discern nature's purpose and therefore to advise mankind on the subject of healthy living, to ensure the 'hygiene of mind'.[148] As Clouston warned:

> The increase of the disease in modern times among both sexes, but especially among women of the uneducated classes, is a sad but proved fact in all European countries. Its meaning is just as certain, that the lives of some classes of our city population are more immoral than they used to be. The social reformer, the clergy, and the educationalist have an uphill fight with human nature, and as yet not an altogether successful one in some respects and among some classes. Let science now step in to their aid.[149]

In the last third of the nineteenth century, disease boundaries were being expanded to include behaviour patterns that might have been dismissed as immoral or criminal by earlier generations. Alcoholism and moral insanity became potential diagnoses rather than culpable failures of volition. The contemporary prestige of somatic

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[145] J. Thornley, 'Syphilis', M.D. thesis, University of Glasgow (1886), p.42.

[146] Cited in M. Foucault, *The Birth of the Clinic* (London, Tavistock, 1973), p.198.

[147] A. Beveridge, 'Thomas Clouston and the Edinburgh School of Psychiatry', in G. Berrios and H. Freeman (eds), *150 Years of British Psychiatry, 1841-1991* (London, Royal College of Physicians, 1991), p.378.

[148] A. Beveridge, 'Thomas Clouston and the Edinburgh School of Psychiatry', p.378.

[149] *92nd Royal Edinburgh Asylum Annual Report*, 1904, LHB7/7/11, p.19.

models gradually redefined these behaviours as falling into the purview of medicine.[150] A growing secularism paralleled and lent plausibility to this framing in medical terms of matters that had been previously construed as essentially moral. Science, not theology, most physicians believed, should now be the arbiter of such questions. Thus alienists were taking on a wider social role. The physician, rather than the priest or judge, was becoming the appropriate guardian of the rights and morals of society and the individual.

The Social Epidemiology of GPI in the Four Asylums

GPI had a noticably tight, well-defined patient population. Its epidemiology was thus significant. As noted above, it was a city disease. It was also a disease of the working classes. Ford Robertson was unusual in stating that GPI was 'a disease of the rich and the great as well as of the poor, and that it was by no means confined to the lower social strata'.[151] The majority of writers did not share his findings. On the whole, physicians found GPI to be much more frequent in the lower classes than in the upper. The percentage stated by many authors was around 1.5 pauper males to one private, and twice as many pauper females as private, although the ratio could be much higher. It was a common observation that GPI was extremely rare in gentlewomen, while syphilis was not diagnosed in wealthy REA East House women.[152] Although cerebral strain was often cited as a cause:

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[150] C. Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine* (Cambridge, Cambridge University Press, 1992), pp.268-9.

[151] W. Ford Robertson, 'The Pathology of General Paralysis of the Insane', *Review of Neurology and Psychiatry*, 4 (1906), p.74.

[152] A statistical analysis for the four asylums would be meaningless here, since Woodilee only admitted pauper patients; while in 1897, Gartnavel removed the last of its pauper admissions to the newly built District asylums. Rosslynlee only admitted 29 private GPI patients (against 152 paupers), since it was intended for pauper patients, only admitting private patients and patients from parishes beyond the district to fill vacant beds and generate profit for the institution. Only my REA sample has a large number of both pauper and private patients.

> neither the members of the learned professions appear to be especially susceptible, nor does intellectual work or any other special kind of occupation seem to predispose the individual to paresis.[153]

Thus, many general paralytics admitted to the Scottish asylums were butchers, carters, clerks, domestic servants, housewives, labourers, miners and soldiers.

Table 7.3 Age Range of Scottish General Paralytics, 1880-1930

Age Range	Percentage % (n)
0-20	2 (14)
21-30	8 (75)
31-40	37 (341)
41-50	35 (320)
51-	18 (161)

n=911
Source: *Four Asylum Case Notes*, 1880-1930, LHB7/51/34-120, LHB33/13/5-36, GGHB13/5/62-67 & 123-148, GGHB13/5/98-122 & 149-194, GGHB30/4/1-63, and GGHB30/5/1-61.

The gendering of the disease was equally significant. The male was much more prone to GPI than the female, in the ratio of as many as eleven to one. The four asylums had an average gender ratio of five to one, although Gartnavel's gender divide was only 8 per cent female to 92 per cent male general paralytics.[154] And finally the age of those diagnosed was commonly between thirty and fifty years. It could occur outwith these ages, but apart from some cases of juvenile GPI, the published literature and my samples reveal GPI to be a disease very much of middle age, as **Table 7.3** displays. In fact the average age of the general paralytic population in each asylum is strikingly similar – 40 in Woodilee, 42 in Gartnavel and the REA, and 43 in Rosslynlee – and not easily accounted for. The final common characteristic of GPI–diagnosed patients was a history of reported excess or 'debauchery'. The alienists were most interested, when obtaining the patient's

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[153] Wagner, 'Comparative Frequency of General Paralysis', *Glasgow Medical Journal*, 8 (1902), p.230.

[154] The percentage of male paralytics for the other three asylums was 77% in REA, 80% in Woodilee, and 82% in Rosslynlee.

personal and family history, in establishing whether or not the patient had over-indulged in alcohol, tobacco or sexual intercourse. Thus GPI was popularly perceived to be a disease associated with middle-aged working-class urban males with an alcoholic or promiscuous past.

The Masculine Malady

From the 1890s, looking at the admissions to British asylums generally, female admissions began to outnumber male. Female longevity and vulnerability to modern living were thought to account for this trend. However, males were consistently far more likely to develop GPI than females – the disease affected, at the conservative estimate of the Scottish Commissioners in Lunacy, four times more men than women.[155] This is perhaps to be expected since statistically more men suffered from venereal disease and would thus acquire GPI; while the shame would discourage some women from entering an asylum, despite suffering from the affliction. In addition, confinement might be more urgent for a male, were he the breadwinner of the family. The aetiology of GPI fitted very well with this 'natural' epidemiology. Quite simply, the marked difference between the incidence of GPI among women and men was thought to be because the 'male sex is much more exposed to the injurious social influences which can cause it'. The London-based alienist Mickle, an authority on GPI, elaborated these influences:

> Probably, the cause of the sexual disproportion mainly lies in the greater moral shocks and mental strain to which the male is subjected, as well as the greater frequency with which he indulges in excess, especially alcoholic. But the tension and effort of life among men, the more exhausting effect of sexual excess in them, the greater frequency of their intemperance in alcohol and tobacco, and greater liability to syphilis, injury and isolation, do not explain all. The male brain is innately more liable to organic disease than the female.[156]

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[155] *55th Commissioners of Lunacy for Scotland Annual Report*, 1913, GGHB13B/14/69, p.lxv.

[156] W. Mickle, *General Paralysis of the Insane*, 2nd Edition (London, H. K. Lewis, 1886), p.247.

Griesinger thought that GPI more commonly affected men because of their 'more frequent excesses in spiritous liquors and in venery' and perhaps because of their use of 'strong cigars and strong coffee'. It had likewise occurred to Dr. Ireland that the large number of male as compared with female admissions 'might be due to the fact that syphilis and drunkenness were more common amongst the men than the women'.[157] We might substitute the word 'common' with 'acceptable'. There was only one type of woman in whom it was considered appropriate to diagnose GPI – prostitutes, or morally-dubious lower-class women who were already associated with promiscuity and vice. Thus Margaret E., a 35 year old prostitute admitted to the REA in October 1880, had syphilis openly given as the cause of her GPI.[158]

These broader epidemiological trends are clearly reflected within Scotland. For those women admitted to the Scottish asylums with GPI, the majority had 'bereavement', 'menopause', 'paralysis', 'senility', 'worry', or 'unknown', mentioned as their cause of insanity. Only for a handful is syphilis mentioned, usually with a question mark after it, or it is called 'acquired syphilis', or 'syphilis contracted from husband', and so the blame is displaced. At Rosslynlee, Susan C., a 50 year old widowed dressmaker admitted in March 1921, had: 'Syphilis (got from her first husband)'.[159] However in Woodilee, from 1914 onwards, their female general paralytics commonly had syphilis listed as an exciting cause. Of course as a parochial asylum, these women tended to be poor and of a lower status in society. There are similar findings for occupation. The parochial asylums rarely admitted private patients, but in the case of a 56 year old married teacher admitted to Woodilee in February 1907, Robert N., the causes were quite respectable. His wife gave an account of the history of the patient and his illness, weaving his regular church attendance and status as a caring father into her story:

> Mr [N.] has been failing very much in health for a good while. Often when going to church, which is four and a half miles from us, he would have to stand on the road for want of breath. He always said to me his heart was affected and he has taken our little boy's illnesses

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[157] 'Discussion', *Journal of Mental Science*, 20 (1874), p.320.

[158] *Royal Edinburgh Asylum Case Book*, LHB7/51/35/799.

[159] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/32/69.

> (accident to eyes) very much to heart. My husband was himself very bad with his eyes.[160]

The mention of 'church' in some patients' histories is particularly interesting in vouching for a patient's respectability. Similarly, a female teacher, Mary O., admitted to Rosslynlee in October 1903, was described as 'steady and sober', the causes of her illness noted to be worry and a potential breakdown.[161] Likewise, those physicians and solicitors admitted to the REA with GPI had stress, overwork, worry and sunstroke listed as their causes of GPI, although syphilis was not entirely absent. This can be extended to most of the private GPI patients at the REA, where some kind of mental strain or overwork was the most common cause, and syphilis was only occasionally mentioned.

The Dundee Asylum Annual Report contains an interesting observation in 1890, which signalled changing opinions within Scottish society, allowing GPI to be tentatively linked to women:

> It is worthy of notice that of the deaths from general paralysis and organic brain disease - 22 in all - no fewer than 13 were females, which would indicate a remarkable increase of late years of such affections in the female sex.[162]

By 1905, Gartnavel had noted a similar trend, but was careful to distance itself from this trend, given the social standing of its clientele:

> General paralysis accounted for 8 of the admissions – all males – and there is not now, nor has there been for some time, a female case of this disease under treatment here. This also contrasts very markedly with what obtained in Asylums drawing their patients from the lower and lowest strata of the population, and in one of which the number of female cases of general paralysis admitted last year was actually in excess of the males.[163]

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[160] *Barony Parochial Asylum Case Book*, GGHB30/4/16/45.
[161] *Midlothian and Peebles District Asylum Case Book*, LHB33/13/19/177.
[162] *70th Dundee Royal Asylum Annual Report*, 1890, LHSA GD17/1/26, p.31.
[163] *92nd Glasgow Royal Asylum Annual Report*, 1905, GGHB13B/2/223, p.13.

That same year, Clouston noted:

> striking is the comparative increase of the disease in the female sex among our poorer classes. When I was here as an assistant physician in the early sixties it was so uncommon a thing to have a woman admitted suffering from general paralysis that the medical staff would all go to see such a case when it did come. In 1872, the year before I came here as Physician-Superintendent, there were no such female admissions, and in 1874 there were only 3 cases. This year there were 38 women sent to us suffering from the disease, all of them but one of the rate-paid class, in fact there were only 6 general paralytics in both sexes of the private class .... For the first time in our history the number of admissions of female general paralytics exceeded that of the men.[164]

Clouston considered this 'a bad sign of the moral status and mode of life of the class from which those patients come'.[165] Similarly, Clouston found that, despite the fact that 'the number of women general paralytics exceeded that of men', a 'unique and unprecedented fact', it was still very much a class disease, and he reassured readers of the Annual Report 'that our better-off people live more cleanly'.[166] Either through an altered clinical course of GPI in women,[167] improper diagnosis and recognition of incidence levels among women, or physicians failing to recognise the disease in women because they did not meet the 'social' criteria of the disease, the number of males diagnosed with GPI was generally far greater than the number of females.

The Social Construction of GPI

It might be the case that, rather than naturally occurring mostly in urban males, alienists simply diagnosed GPI more often in urban men because they fitted the social characteristics of the disease as well as, or rather than, the medical

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[164] *93rd Royal Edinburgh Asylum Annual Report*, 1905, LHB7/7/11, p.12.
[165] *Ibid.*
[166] *94th Royal Edinburgh Asylum Annual Report*, 1906, LHB7/7/11, p.13.
[167] Mickle noted GPI to display less salient features and a less dramatic course in women (*General Paralysis of the Insane*, p.248).

characteristics. Incidence and diagnosis should thus be differentiated. For example, at Inverness District Asylum between 1889 and 1908, there was an average of only two GPI admissions per year, with no more than 5 in any one year.[168] In fact the alienists seemed proud of this lack of cases, understandable given the immoral associations of the disease. However, the 1893 Annual Report lists two men as dying from GPI, with the significant statement:

> It is generally said to be almost unknown in this Asylum, in Irish Asylums, and among savage races, but, from recent observations, I [the Physician Superintendent] have every reason to believe that it is not at all so rare here as is generally alleged by authorities on the subject.[169]

To believe that the aetiology of GPI was based purely upon epidemiological observations assumes a straightforward relationship between the disease's 'natural' appearance and doctors' interpretations of it. A social constructionist reading of the evidence might suggest that this interpretation is naïve, and that in fact the epidemiology and aetiology were mutually constructing and reinforcing.

Types of explanation were needed to account for the fact that more men than women, more poor than rich, and more urban-dwellers than country-dwellers, were being diagnosed with GPI. The characteristics and identity of the disease and its aetiology fitted with a 'male' model of disease, including the association with alcoholism, vice and stress. It was only with changing social perceptions of a woman's place in society that it became more acceptable, or at least more common, for women to indulge in this sort of behaviour, and an increased diagnostic rate of GPI in women was subsequently charted. Thus we see an easy fit, in the late nineteenth century, between lower-class males and 'unsavoury' women contracting the disease and Victorian social ideologies. Clouston's explanation of the

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[168] The total asylum admissions for this period were between 100 and 200 per year.

[169] *29th Inverness District Asylum Annual Report*, 1893, HHB3/8/10, p.12.

preponderance of male general paralytics was that 'if women drank bad liquor and lived riotous existences, they also might become general paralytics'.[170]

There was clearly a moral judgement going on here. Women were not expected to behave in ways that led to contracting GPI, dabbling in the excesses and strains of modern civilisation and urban life. It is highly possible, although very difficult to prove or quantify, that alienists were more efficient at diagnosing GPI in those who fitted the social characteristics of the disease, because they were looking for such a disease in these patients. That is, diagnosis did not reflect incidence, but merely measured the ability of alienists to recognise the disease in those who fitted the social as well as the medical profile of the disease. If a patient was male, working class, and an urban resident, especially with a history that included alcohol, tobacco or promiscuous sexual intercourse, the disease might be more easily recognised. Women or the middle classes might display similar symptoms yet receive different diagnoses, due to the social construction of the disease and the identity which it had assumed.

Conclusion

The interaction between science, medicine and psychiatry has been neither straight-forward nor strictly distinct from social and cultural factors, and this is seen quite clearly with aetiological theories and constructions of GPI. As Rosenberg asserts, disease is framed by the culture and society around it.[171] The hypotheses put forward to explain the many causal pathways to GPI tell us a great deal about the concerns of alienists of the period. Lacking any uniform understanding of the aetiological agent, or perhaps content not to find one, contemporaries framed a picture of GPI which sought to reduce the threat posed by the randomness of disease, while simultaneously articulating their own social and cultural values. Alienists therefore developed a

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[170] R. Lees, 'The Treatment of General Paralysis of the Insane', M.D. thesis, University of Edinburgh (1938), p.5.

[171] Rosenberg and Golden, *Framing Diseases*, introduction.

complex, multifactorial concept of GPI which related the disease to the influences of urbanisation and degeneration, with a particular emphasis on 'fast living' and 'excess' (of both sexuality and alcoholism). These concerns and medical ideologies can clearly be contextualised within the broader social concerns and sexual politics of the fin-de-siècle period. Simultaneously, medical knowledge surrounding syphilis and GPI was used to legitimise and lend scientific validity to such concepts as civilisation and degeneration as sources of illness. Thus, GPI continued to be related to an immoral lifestyle and the degenerate effects of the city, before and after the relationship with syphilis had been firmly established. We can also see the use of diagnosis as a form of moral regulation. Consequently, Victorian alienists assumed a new medico-moral role as 'priests of the body' and moral guardians to their urban populations, teaching prudent adherence to the Victorian moral values of continence, monogamy, and racial hygiene.

Chapter Eight: Conclusions

Edward Shorter denigrates 'fantastic writing about the social construction of illness', asserting that 'there was nothing socially constructed about neurosyphilis'.[1] On one level, this is a fair comment. When it comes to matters of illness and the severe mental and physical symptoms which accompanied the diagnosis of neurosyphilis, extreme claims such as that of Delaporte that 'disease does not exist'[2] or that of Szasz that 'mental illness is a myth' seem insulting and ignorant of the realities of suffering that patients endured. A social constructionist approach is problematic when it attempts to argue that disease is *only* a socially constructed set of knowledges and practices, rather than having its basis in a material reality.

A less radical form of social constructionism allows us to retain the biological dimension of illness while 'framing' it with social and cultural perceptions and interpretations of disease. As Rosenberg summarises, disease is 'at once a biological event [and] a generation-specific repertoire of verbal constructs reflecting medicine's intellectual and institutional history'.[3] This thesis has found social constructionism a useful tool in the process of showing precisely how the disease category of neurosyphilis was socially and culturally mediated during the period 1880 to 1930. The main argument has been advanced by considering the diagnosis, treatment and aetiology of GPI, the most consistently applied term for syphilitic insanity used in the four asylums studied.[4] However, some observations have also been offered about how alienists used ideas about the diagnosis, treatment and aetiology of GPI to advance their professional status in late Victorian and early Edwardian society.

An examination of the clinical diagnosis of GPI before the introduction of laboratory methods reveals that it was not quite the stable and easily identified

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[1] E. Shorter, *A History of Psychiatry: From the Era of the Asylum to the Age of Prosac* (New York, John Wiley and Sons, 1997), p.54.
[2] F. Delaporte, *Disease and Civilization: The Cholera in Paris, 1832* (Cambridge and London, MIT Press, 1986), p.6.
[3] C. Rosenberg and J. Golden (eds), *Framing Diseases: Studies in Cultural History* (New Brunswick and New Jersey, Rutgers University Press, 1992), p.xiii.
[4] The diagnostic labels of 'cerebral syphilis' and 'tabes dorsalis' are not found in Gartnavel until the 1920s, and in fact David Henderson was unique in ascribing psychiatric symptoms to tabes dorsalis, as most other alienists considered locomotor ataxia to be a physical disorder. Similarly, Skae's 'syphilitic insanity' was utilised only by Thomas Clouston at the REA.

disease category that it has been portrayed to be. Evidence from the case notes shows that a significant number of patients in the sample were initially diagnosed with another mental condition, most commonly mania or melancholia. In others, GPI was not finally confirmed until post-mortem.[5] This can be attributed to the polymorphous symptomatology, clinical 'imitations', and 'stadial' nature of GPI. Nevertheless, the data also shows that such 'misdiagnoses' were corrected by reference to a specific and tangible cluster of symptoms associated with GPI throughout the 1880 to 1930 period. In many instances, a 'degrees of fit' argument was probably applied by practising clinicians only too aware that physical symptoms often took longer to develop than mental ones.

An examination of the clinical diagnosis of GPI after the introduction of laboratory methods reveals that the Wassermann test played an important role in the diagnosis and treatment of neurosyphilis and was crucial in the developing identity of this disease. However, information gathered over the period 1880 to 1930 from sampled case notes indicates the symptoms associated with GPI in the four Scottish asylums remained fairly static, despite the supposed impact of laboratory-based diagnosis. Serological testing was carried out in many cases, but if there was disagreement between the judgement of the clinician and the findings of the laboratory, then the former took precedence. Despite their published rhetoric about the power of the laboratory, most alienists seem to have felt that their clinical diagnostic skills were at best aided, not replaced, by this new serological tool. It is clear that diagnosis of GPI using the Wassermann test was mediated by a range of institutional, professional and social factors, as well as the scientific, technical and instrumental features of the procedure itself.

Treatment is another area in the history of neurosyphilis that has been illuminated by comparing and contrasting the case notes, annual reports and published literature. Triumphalist accounts were common in the years after the introduction of malarial therapy, and have persisted in historical accounts to the present day. However, as with the effectiveness of the laboratory in diagnosis, the

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[5] In chapter seven it is suggested that, in some instances, not diagnosing GPI until post-mortem might have been because the patient did not fit the social profile of the disease. Therefore it was not initially recognised in such a case.

published comments of physicians on the efficacy of malarial therapy lie in stark contrast to the case note findings. The supposed successes of the Wassermann Reaction and malarial therapy in diagnosing and treating neurosyphilis have been taken directly from annual reports, whereas the clinical reality of diagnosis and treatment revealed in the case notes proves very different.

Regardless of the lack of recorded cures and discharges, however, this treatment made a significant impact on perceptions of the disease. To an extent, this section of the asylum patient population was used for experiments involving new and seemingly bizarre forms of therapy. And yet, given the fatal prognosis of neurosyphilis prior to these developments, desperate remedies were embraced enthusiastically. A number of neurosyphilitics did believe themselves to have benefited from this treatment, according to annual reports and newspaper articles, so that any loss of civil liberties, potential risk or suffering was widely perceived to be worthwhile. However, like so many areas of the history of medicine, the voice of the patient is inevitably silent and therefore one's concept of the criteria of social acceptability is largely that accepted by the medical profession.

Given the ways in which medical and social processes have been shown to intermingle in the diagnosis and treatment of GPI between 1880 and 1930, it is unsurprising that historical ideas surrounding its aetiology have the same characteristics. Despite the fact that the discovery of the spirochaete was a significant step towards establishing syphilis as the cause of GPI, there was substantial resistance. Thomas Clouston and David Yellowlees merely reflected the general view of British alienists in being unconvinced of the syphilitic basis of GPI. In particular, the *pseudo-GPI* diagnostic label became an especially neat way to entertain the theory without having to accept it fully. Even with mounting evidence in support of the syphilis hypothesis, alienists at first resisted and then accommodated it into the pre-existing theories.

We can only fully understand alienists' perceptions of GPI during the period of this study by locating the multi-causal aetiological theories surrounding it within broader social concerns and medical ideologies of the late-nineteenth and early-twentieth centuries. Alienists employed a *thought style* that saw GPI as the result of the complex interplay between the temptations and excesses of urbanisation. This

stance entailed a social predisposition to characterise the disease as one affecting city dwelling middle-aged working-class males. Analysis of case note data has shown that the social characteristics of most general paralytics in the four asylums fit this profile. Therefore they were probably more likely to be diagnosed and treated accordingly. The background of such a patient was expected to fit one of two categories – debauched and prone to excess, or learned and liable to the stresses of overwork.

Hare claimed that the diagnosis of GPI 'became objective' in the first decade of the twentieth century, when the specific reactions of the cerebrospinal fluid were elucidated.[6] However, I have argued that the introduction of laboratory testing was still reliant upon the background of the patient and thus continued to be socially mediated. Not everyone was tested, only those already suspected of having the disease in the first place. Furthermore, the results of testing were often disregarded if they contradicted other clinical assessments. Socially sustained judgements related to the prevailing alienists' mindset concerning GPI were not abandoned at the laboratory door.

Hypotheses proposed to account for the causation of GPI tell us a great deal about the concerns of alienists of the period. Contemporaries framed a picture of GPI that sought to reduce the threat posed by the randomness of disease, whilst simultaneously articulating their own social and cultural values. Thus, the act of diagnosis took on a moral agenda, judging and regulating the behaviour of patients. In the process, alienists took on an additional medico-moral role, propelled into acting as moral guardians and 'priests of the body' to their urban populations, teaching prudent adherence to the Victorian moral values of continence, monogamy, and racial hygiene.

The work of Noguchi and Moore, large-scale statistical surveys and the widespread use of the Wassermann test eventually led to acceptance of the hypothesis that GPI was caused by syphilis. Alienists accommodated themselves to it gradually and, in time, their growing understanding of the organic aetiology of GPI helped lead to new conceptualisations of insanity *per se*. In Scotland, syphilis is now relatively infrequent, with only 7 cases reported at clinics in Scotland in the period

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[6] E. Hare, 'The Origin and Spread of Dementia Paralytica', *Journal of Mental Science*, 105 (1959), p.612.

from 1st April to 30th September 1995.[7] No cases of GPI reside in the four asylums today. However, there are occasionally typical and atypical cases of GPI, as well as modern equivalents, which should serve as a warning against complacency. The most statistically significant aspect of neurosyphilis in the contemporary medical literature is its relationship with AIDS and HIV. Harris *et al* deem this to be such a significant relationship that they published an article aiming to refamiliarise physicians with neurosyphilis purely so they could recognise and diagnose the condition when confronted with AIDS patients.[8] The *DSM-IV* notes a form of dementia directly due to HIV infection of the central nervous system, typically characterised by forgetfulness, poor concentration, apathy and social withdrawal, occasional delusions and hallucinations, imbalance, tremors, and ataxia, a cluster of symptoms closely resembling those of GPI.[9] Certainly there is a clear relationship between HIV and neurosyphilis co-infection.[10] Thus there is a dementia-related syndrome related to HIV, just as there was with syphilis, and it is only recently that the prevalence of this syndrome has become clear. It would appear that the relationship between syphilis and psychiatry continues to develop. Perhaps neurosyphilis should not be consigned to the history books just yet.

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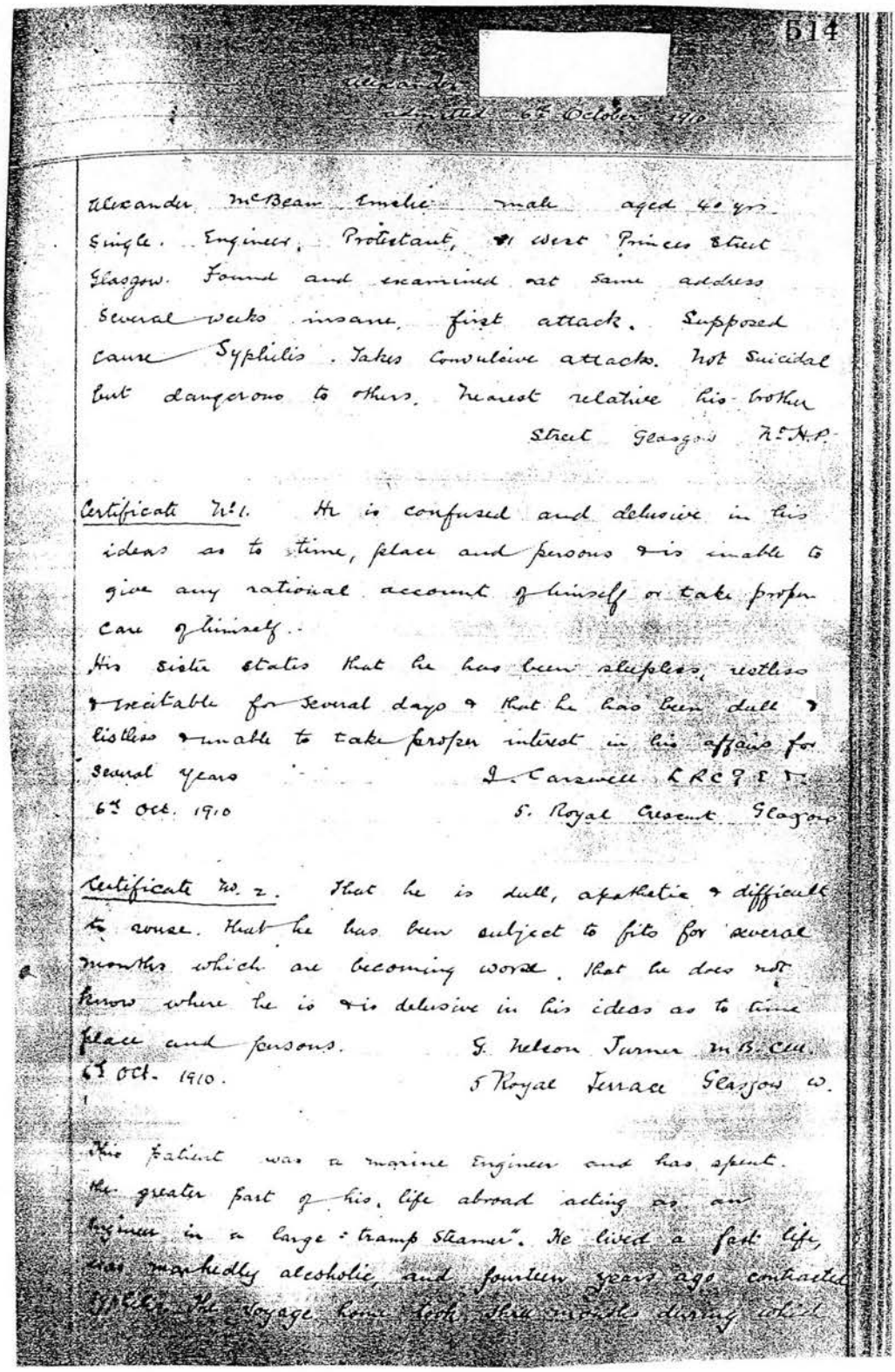
[7] MSSVD and SCIEH, *Genito-Urinary Medicine Statistics, Scotland: Six Month Report for 1995* (Edinburgh, ISD Publications, 1996), p.9.

[8] D. Harris *et al*, 'Neurosyphilis in Patients with AIDS', *Neuroimaging Clin N Am*, 7:2 (1997), 215-21.

[9] American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV*, fourth edition (Washington, American Psychiatric Association, 1994), p.148.

[10] See, for example, C. Hutchinson *et al*, 'Characteristics of Patients with Syphilis Attending Baltimore STD Clinics', *Archives of Internal Medicine*, 151:3 (1991), 511-6; D. Johns *et al*, 'Alteration in the Natural History of Neurosyphilis by Concurrent Infection with the Human Immunodeficiency Virus', *New England Journal of Medicine*, 316 (1987), 1569-72.

Appendix 1: Case Note Example – Gartnavel, 1910



514

Alexander [redacted]

admitted 6th October 1910

Alexander McBean Emslie male aged 40 yrs. Single. Engineer, Protestant, 81 West Princes Street Glasgow. Found and examined at same address Several weeks insane, first attack. Supposed cause Syphilis. Takes Convulsive attacks. Not Suicidal but dangerous to others. Nearest relative his brother Street Glasgow N.K.P.

Certificate No 1. He is confused and delusive in his ideas as to time, place and persons & is unable to give any rational account of himself or take proper Care of himself.

His sister states that he has been sleepless, restless & irritable for several days & that he has been dull & listless & unable to take proper interest in his affairs for several years

J. Carswell LRCP & S.
6th Oct. 1910 5 Royal Crescent Glasgow

Certificate no. 2. That he is dull, apathetic & difficult to arouse. That he has been subject to fits for several months which are becoming worse. That he does not know where he is & is delusive in his ideas as to time place and persons.

J. Nelson Turner M.B. CM.
6th Oct. 1910. 5 Royal Terrace Glasgow W.

This patient was a marine Engineer and has spent the greater part of his life abroad acting as an Engineer in a large "tramp steamer". He lived a fast life, was markedly alcoholic, and fourteen years ago contracted Syphilis. On voyage home took ill with trouble during which

three; the other two being alive and well. He himself was a healthy robust man up till the time he contracted Syphilis fourteen years ago.
His father died at the age of 63 years of Cerebral Haemorrhage said to be due to the shock he received when he heard of his sons condition.
His mother died in her 66th year of ulcerated Stomach.
He has taken no alcohol for six years but prior to that time he partook of it freely.
Present Condition. He is a strongly built man. His pupils react to light and on accommodation but the left is larger than the right. He has a very slight facial tremor.
He walks on a broad base, putting his heels down first and stamping. The left leg is slightly Spastic. He is able to stand fairly steadily with his feet together and his eyes closed. Knee jerks exaggerated but no ankle clonus. The wrist jerk is exaggerated on the right side but very little on the left.
His speech is slow but not very markedly affected and when given time is able to articulate fairly freely. He does not seem to have any grandeur ideas at least so far he has not given expression to any.

Oct 15 There has undoubtedly been some improvement in this patients condition, indeed, he, himself, appears quite conscious of this. Mentally there is little to note. The pupils were equal to-day & sluggishly active to light. His gait, except when going downhill & then it is very characteristic Stamping, shows considerable improvement from that noted above.

His throat is red and congested, his temperature is at times elevated, but otherwise he is fairly healthy.

Dec. 13th. Wm Emslie is very hoarse, but the redness and congestion of the throat has gone down considerably His temperature keeps normal, and he does not cough much now: and but for the laryngeal condition, seems to be in fairly good health.

Dec. 20th. Wm. Emslie is now very much better, his hoarseness has gone and he has been up for a few days: he takes his food well, and seems to be quite himself again.

Dec. 24th. Wm. Emslie is back to Ward I, takes his food in the Dining Hall, and is very well. He has complained of pain and deafness in the ears. both ears have been syringed and examined, but no abnormality was detected. He still complains of deafness in the left ear, but hears better with the right.

1914
January 9th. Wm Emslie has still deafness with the left ear. He still drags the left leg after him when walking. A week ago, while in bed he is said to have had a fit but in the morning he was all right again, and beyond a sore on his tongue, no effects were noticed.

January 21st. Wm Emslie had a subcutaneous injection of "606" in the interscapular region to-day.

January 22nd. The patient had elevation of temperature yesterday following the injection, but had no nausea. He has considerable pain behind the shoulder where there is some swelling, redness & tenderness.

January 23rd. There is still a fair amount of swelling redness round the left shoulder blade & the patient complains of pain

Appendix 2: Case Note Example – Woodilee, 1910

6

NAME, Thomas Reg. No. 9904

Age, 38 Married, ~~Single~~, ~~Widowed~~,

Religion, Protestant Occupation, Cab Driver..

Whether First Attack, Yes. Duration,

Length of Time Insane, A few days

Previous Care,

Address of Nearest Relative, Wife: Mrs. Mary

Admitted 19th May, 1910 under Emergency Certificate

Facts of Medical Certificates, He is dull and strange in manner &c. has been stealing petty articles; cannot explain his conduct. He is facile.

Date of Sheriff's Order, 19th May, 1910.

Previous History ascertained from:—Synopsis of present illness, previous health, social history, and family history,

State on Admission—Synopsis of

Diagnosis, G P Cerebrosyphilis

Prognosis

PHOTOGRAPHS, NOTES, etc.

6

Hour of Admission, 10·40 p.m.

Date of Emergency Certificate, 17th May, 1910.

Where from, 24 Kelvindale St.

By whom brought, Geo. Watt.

To what Parish chargeable,

Hour of Bathing, 11·20 p.m.

IDENTIFICATION.

Height, 5' 7" Weight, 11st Hlbs. Complexion,

Hair, Brown Eyes, Blue. Deformities,[1]

Malformations,[1] Moles,[1] Warts,[1]

Callosities,[1] Pigment Marks,[1]

CLEANLINESS.

Clean,[2] Yes ~~Dirty,[2]~~ ~~Very Dirty,[2]~~

Signs of Fleas,[1] No. Bugs,[1] No Lice on Body,[1] No

Lice on Head,[1] No Scabies,[1] No.

NOURISHMENT.

Very Stout,[2] Stout,[2] Well Nourished,[2]

Thin,[2] Emaciated,[2] Greatly Emaciated,[2]

Rashes,[1]

INJURIES.

Broken Ribs,[1] Bruises,[1] Other Injuries,[1]

SIGNS OF DISEASE.

Enlarged Glands,[1] Hernia,[1] Nodes,[1]

Varicose Veins,[1] Scars,[1]

Temperature, 97·8 Pulse, 72 Respiration, 19.

1. If none, the fact to be stated.
2. Strike out the words not required.

Matron or Head Attendant. S. H. Irvine.

Admitting Physician, W. Gilfillan.

Is the Father of Patient living? No.

Has he had any serious illness either of body or mind during his life? No.

Is the Father of Patient dead? Yes.

If so, what disease or illness did he die of? Bronchitis.

Father's age at death, 56.

Is the Mother of Patient living? No.

Has she had any serious illness either of body or mind during her life? Not known.

Is the Mother of Patient dead? Yes

If so, what disease or illness did she die of? Dropsy.

Mother's age at death, 46.

How many Brothers and Sisters of Patient are living? four.

Number of Brothers, One.

Number of Sisters, Three.

Have any of the Brothers or Sisters living had any serious disease or illness during life? No.

How many Brothers are dead? One.

What were the causes of death? Had been abroad and died after coming home. Thought to have taken to drink.

What ages did they die at? 26

6

How many Sisters are dead? None known of.

What were the causes of death?

What ages did they die at?

Do you know of any relative of the Patient on the Father's side (grandfather, grandmother, uncle, aunt or cousin) who ever was in an asylum, or ever had nervous disease, rheumatism, gout, or any special disease or habit (such as drunkenness, opium habit, etc.); if so, please give the exact information about this relative?

None so far as known.

Do you know of any relative of the Patient on the Mother's side (grandfather, grandmother, uncle, aunt or cousin) who ever was in an asylum, or ever had nervous disease, rheumatism, gout, or any special disease or habit (such as drunkenness, opium habit, etc.); if so, please give the exact information about this relative?

One Uncle died from Shock.

When did the present illness begin; how did it begin; what do you think was the cause of it?

May 1908. Lost power in left arm & leg. Nervous. Upper lip twitched. Was very heavy, quiet and stupid, taking no interest in anything.

What signs of illness did the Patient show before admission to Woodilee; was any treatment given to the Patient?

Helped himself to flowers from shops & graveyards also took matches. Did not think he was doing wrong. Was very jealous and bad minded. Thought his wife kept other men in the house and chastised both her and the family. Was in Western Infirmary over two years ago. They said he was a mental case then.

DATE

DAY OF DISEASE

CENT. SCALE.

E	M	E	M	E	M	E	M	E	M	E	M	E	M

41°
40°
39°
38°
37°
36°

No. 9907.

Name, Thomas C

Address,

At what School or Schools were you educated?
Allans Hospital School
Stirling

When did you leave School? 12 years

Resp. M													
Resp. E													
Urine ozs.													
Motions													

DATE.	HISTORY.	DIET, PRESCRIPTIONS AND INSTRUCTIONS.
1910 May 24	Patient is strange in manner) appearance and somewhat facile in manner. He admits lifting small articles but sees no harm in it. He complains of the injustice of his being sent here, and is restless and uncertain at times but is usually good natured and very well pleased with himself although no actual grandiose delusions are present. His memory is good and he can give a fairly good and apparently reliable account of himself. D' Clifton	
Sept 3rd	Patient this morning was noticed to be almost unable to speak — uttering only inarticulate sounds. About midday he had an epileptiform convulsion of great severity, after which there was aphasia but no motor paralysis. He appeared to understand what was said to him. J.R.S.	
Dec 1	The condition of this patient is not improving. During the last week patient had two attacks similar to the one above described without the general convulsions he has been put on Pot Bron gr XX & Chloralgr X. He is much better to-day, but	

6

DATE.	HISTORY.	DIET, PRESCRIPTIONS AND INSTRUCTIONS.

— Physical Condition on Admission. —
General Observations:- Patient is well developed and well-nourished. The muscles are somewhat flabby. There is an old badly-united fracture of the left clavicle.
Circulatory System:- The pulse rate is 88: but somewhat shotty in character, it is regular, of moderate amplitude and tension. There is no thickening of the arterial coats. The apex beat is in the 4th interspace. 3½ from the middle line. The borders of cardiac dullness are:- Upper:- in the 4th interspace.
Right:- ½ to left of middle line.
Left:- 4 . . . The greatest width is 3½. At the aortic area there is a double-systolic and diastolic murmur, but it is not well marked. The 2nd sound in the mitral area is somewhat accentuated.
Respiratory System:- The chest is well-formed and the range of movement is good. The percussion note is clear all over. The respiratory murmur is well heard and is free from adventitious sounds.
Digestive System:- The tongue is moist and furred. The teeth are good. The liver dullness in the nipple line measures 4. There is nothing abnormal palpable in the abdomen.
Nervous System:- The pupils are equal. They react very sluggishly to light, and somewhat sluggishly in accommodation. There is no nystagmus or strabismus. There is a tremor of the hands and tongue. Marked slurring of the speech is present. Knee jerks are elicited with difficulty. There is no ankle

6

DATE.	HISTORY.	DIET, PRESCRIPTIONS AND INSTRUCTIONS.
	clonus. Gait and station are steady. Urine:- Amber; phosphates with mucus deposit; acid; s.g. 1024; no albumen & no blood; no sugar. Reporter: W. Buchanan.	
	still confined to bed. He is able to converse rationally, but his speech seems to be becoming slower. He had a few days ago a delusion that he was not able to pass his water. no local condition was found to account for this idea. Up till this present indisposition patient's gait has been quite steady & he ate & slept well. Memory is fairly good. (W.S. Rebilly)	
Dec 21	During the past week patient has become very much worse. He has not been allowed up. His speech has become much more slurred & indistinct, he cannot protrude his tongue so well as before & he has become more feeble in his legs when he is out of bed. He has been subject to several attacks of almost maniacal excitement, during which he says that he is being poisoned, that his arm is broken, he wants away & struggles. During these attacks he requires three or four attendants to restrain him in bed & hyoscine hydrobromide gr 1/70 hypoderm has always given relief - since the 17th inst patient has required 6 such injections. Chloral Bromide mixture is nearly always rejected by patient when he is in this condition. (W.S.)	
Dec 29	During the last 8 days patient has been much quieter & has now settled down to a semi-comatose condition. Pulse to-night at 6 o'clock was 120 & temp 102.6°. Patient was perspiring freely & pupils were dilated whilst respiration were rapid & shallow. Physical examination disclosed dulness over left base extending	

vide p. 6 at end.

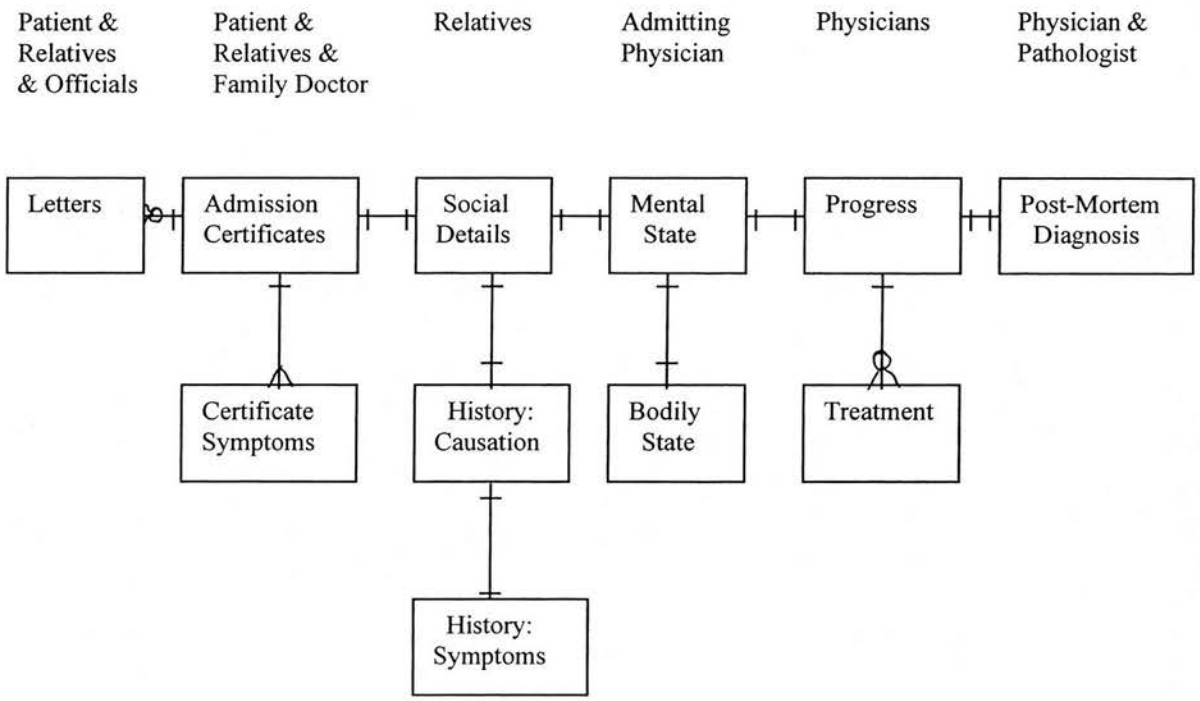
Appendix 3: Testimony Entity Relationship Model (ERM)

Key to ERM relationships

One to One

One to Many

One to Zero or Many



Appendix 4: ERM Contents

The Contents of each Table for the REA Database

Key
ID: Primary Key ___: Foreign Key ?: Yes/No *: Derived Variables

LETTERS
ID *
Letter ID *
Writer
Receiver
Date
Letter content

CERTIFICATE SYMPTOMS
ID *
Symptom ID *
Symptom
Symptom coded *

ADMISSION CERTIFICATES
ID *
East or West House
Voluntary/certified
Date 1
Doctor 1
1st Certificate contents
Date 2
Doctor 2
2nd Certificate contents
Extra facts
Relative(s) mentioned
By whose authority sent

HISTORY: CAUSATION
ID *
Disposition
Habits
Prev bodily illnesses
Previous attacks?
PA details
Hereditary propensity?
HP details
Predisposing cause(s)
Exciting cause(s)

HISTORY: SYMPTOMS
ID *
1st mental
1st bodily
Recent mental
Recent bodily
Insane habits
Suicidal?
Dangerous?
Epileptic?
Duration
Other facts

MENTAL STATE
ID *
Exaltation
Depression
Excitement
Enfeeblement
Memory
Coherence
Can answer questions
Delusions/hallucinations
Other abnormalities

BODILY STATE

ID *	Lungs	Weight
Appearance	Heart	Bodily state
Skin	Tongue	Lab tests
Hair	Bowels	Blood tests?
Eyes	Other organs	Amount
Pupils	Appetite	Date(s)
Muscularity	Palate	Result(s)
Fatness	Urine	CSF tests?
Nervous system	Menstruation	Amount
Reflex action	Pulse	Date(s)
Special senses	Temperature	Result(s)
Retina	Height	Abnormalities

SOCIAL DETAILS
ID *
Case note reference *
General register ref *
Forename
Surname
Gender
Age
Marital status
Occupation
Occupation coded
Education
Religion
Private/pauper
Address of patient
Address of relative
Previous admissions
Photographs?
Remarks

PROGRESS

ID *	Length of stay *
Form	Number of progress entries *
Disease	Post-mortem?
Skae's classification	Cause(s) of death
Prognosis	Mental symptoms
Diagnosis	Delusions
Result of treatment	Bodily symptoms
Asylum transfers	Work in asylum
Admission date	Which ward(s)
Discharge date	Remarks

TREATMENT

ID *	Treatments
Treatment ID *	Treatments coded *
Order of treatments*	Comments
Date of treatments	

The Contents of each Table for the Gartnavel Database

Key
ID: Primary Key ___: Foreign Key ?: Yes/No *: Derived Variables

LETTERS
ID *
LetterID *
Writer
Receiver
Date
Letter content

SOCIAL DETAILS

ID *	Occupation
Source *	Occ coded *
Forename	Religion
Surname	Address
Private/pauper	Relative
Parish	Petitioner
Gender	Petitioner address
Age	Surety
Marital status	Rate
	Remarks

ADMISSION CERTIFICATES

ID *	Date 2
Vol/cert	Doctor 2
Date1	Certificate 2
Doctor 1	Extra facts
Certificate 1	Relative mentioned

CERTIFICATE SYMPTOMS
ID *
Symptom ID *
Symptom
Symptom coded *

HISTORY

ID *	Admission reg cause(s)
Epileptic?	Case note cause(s)
Suicidal?	Parents' history
Dangerous?	Grandparents'
Hereditary propensity?	Siblings'
1st attack	Patient's history
Age at 1st attack	Past illnesses
Duration of disorder	Habits
Previous treatment	Other facts

STATE ON ADMISSION

ID *	Respiratory	Delusions
Appearance	Abdominal	Behaviour
Nourishment	Digestive	Lab tests
Marks/bruises	Tremors	Blood tests?
Bodily health	Eyes	Amount
Height	Gait	Date(s)
Weight	Speech	Results(s)
Teeth	Reflexes	CSF tests?
Tongue	Sensation	Amount
Pulse	Urine	Date(s)
Temperature	Mental	Results(s)
Circulatory system	Memory	

PROGRESS

ID *	Post-mortem?
Form	Cause(s) of death
Diagnosis	Which ward(s)
Result	Mental symptoms
Transfer details	Delusions
Admission date	Bodily symptoms
Discharge date	Work in asylum
Length of stay *	Remarks
No.of progress entries *	

TREATMENT

ID *	Treatments
Treatment ID *	Treatments coded *
Order of treatments *	Comments
Date of treatments	

Appendix 5: Issues of Coding and Standardisation

LETTERS

This first table, the only table which really provides the patient's testimony, records any letters retained in the case notes. Of course not all of these letters were written by the patient – some were from relatives or officials inside and outside the asylum. The table records the *writer* and *receiver* of each letter, and the full *contents* of each letter. A foreign key allows every letter to be linked to the patient concerned. Each patient having been given an ID number, that is, a unique means of identification, this number is used to link each individual letter to a given patient.

ADMISSION CERTIFICATES

This table records the two admission certificates for each certificated patient, required by law before a certified patient could be admitted to an asylum. Voluntary patients will not, of course, have the following details. Recorded in the table are the *name of the certifying physicians*, the *date* of the certificates, and the *facts* recorded in the certificates. The symptoms are not coded at this stage – not until the 'certificate symptoms' table – so that the data is not prematurely collapsed.

CERTIFICATE SYMPTOMS

This table uses the admission certificate symptoms, as noted by the relatives and certifying physicians, to show why these patients were felt suitable for admission in the first place. The ID numbers are used to link each individual symptom to a given individual. Each symptom is then coded to see if clusters of symptoms are found for a particular diagnostic category, and if these clusters change over time, thus signalling a change in the identity of the disease. The main symptoms coded are delusions (of grandeur or persecution); dementia-related symptoms (such as memory loss and disorientation); physical symptoms (such as Argyll-Robertson pupils, writing or speech defects, tremors and paralysis); and GPI itself (although a diagnosis, this was also included as a symptom, partly because it was believed to be a cause rather than a form of insanity at the beginning of this period, and partly because the certifying physicians sometimes named it along with the symptoms in

the certificate of admission). Obviously a great deal of care has to be taken with coding to ensure that subtle differences are not lost, but only by grouping such a diverse field together in some sort of coherent way can patterns and clusters of symptoms be perceived.

SOCIAL DETAILS

Most of the information in this table - such as *name, age, gender*, and *marital status* - is entered straight from the documents without any standardisation or coding being required. However *occupation*, as well as being entered exactly as it appears in the case notes, is also coded in line with the Annual Reports, to facilitate comparison of this section of patients with the asylum as a whole. The Gartnavel Annual Reports utilise the six classifications of the census - professional, domestic, commercial, agricultural, industrial and unknown. Of course the Asylum records do not state exactly how occupations are coded, but I have worked in line with the general census classification in coding these occupations. It is acknowledged that occupational coding is inherently problematic, since one does not always know what a particular occupation is, and can have difficulty in grouping even familiar occupations together. There is also the issue that occupation does not equal income **or** status. The coding scheme adopted here chooses to reflect broad occupational groupings, rather than attempting to gauge social standing or income. This table also includes a column which records the exact source reference that each patient's details came from, thereby allowing easy retrieval of an individual's details if necessary at a later stage.

HISTORY: CAUSATION

The two 'history' tables relate to relatives' testimonies, and their understanding of the history of the patient's illness. This table records any *previous attacks* or *hereditary predisposition* the patient may have had, as well as possible *predisposing* (long-held) and *exciting* (recent) causes of insanity. The *causes* in the admission register and documents **and** in the case notes are entered separately since they differ relatively frequently. This particularly relates to syphilis, which was rarely

mentioned in the General Register but more frequently mentioned in the case notes. This provides an interesting comparison at the analysis stage.

HISTORY: SYMPTOMS

This table records the *first* and more *recent mental* and *bodily* symptoms of the patient. As they are recorded separately in the case notes, I have retained these in separate columns, so that any progression of the disease can still be ascertained at the analysis stage.

MENTAL STATE

This table begins the testimony of the asylum admitting physicians. The opinions of the patient and relatives are no longer considered in this part of the case notes. This table records the mental symptoms of the patient on admission. This section of the case notes concentrates on things like the patient's *memory, coherence, ability to answer questions*, and whether they are *depressed, exalted, enfeebled* or *deluded.*

BODILY STATE

This table records the bodily symptoms of the patient on admission. Each part of the body is named separately on the proforma, including the *eyes, gait, nervous system, lungs, heart, bowels, urine, pulse, temperature, height* and *weight*. I have also recorded details of any *laboratory tests* in this table. This relates to any tests on the patient, including temperature and urine, but I have also included specific columns for the *Wassermann reaction* on blood and cerebro-spinal fluid. I record *how many tests* were conducted, the *date* and *result* of each test. This includes all references made to the laboratory, either in the case notes themselves, or where special documentation is inserted into them, recording the results of specimen analysis. However, it should be noted that, where special documentation has been inserted rather than the results directly recorded onto the case notes, it is possible that some of these sheets have been lost over time.

PROGRESS

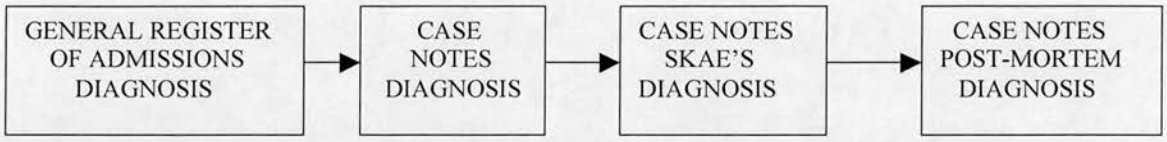
This table records the testimony of the asylum physicians. It records the *length of the patient's stay* in the asylum – by recording the *admission* and *departure* dates, ACCESS can calculate the length of stay by means of a simply equation. The *results of treatment* have been standardised for entry into the database, for the few occasions where slightly differing terms are used to describe the same basic result. The five categories used are *recovered*, *relieved*, *not improved*, *not known* and *died.* Furthermore, this table extracts a great deal of information from the prose section of the case notes – during the patient's stay in the asylum, their *mental* and *physical symptoms* are recorded, the *ward(s)* they stay in, and any *work* they complete during their stay. Each of these elements has its own column in the table.

This table also records the diagnosis/diagnoses of the patient, including *Skae's classification* in the REA. This table is where I record the complete diagnostic process, and I have created a separate column for each stage of diagnosis – admitting physicians, asylum physicians, and pathologist – to allow each possibly different diagnosis to be retained for comparison. I am thus exploiting the technique of record linkage, as I did with causation, by linking information about the same individual from different documents that give diagnostic information. However, in this case I am disregarding the 'testimony' model, as I felt it made more sense to record each diagnosis in the same table, to enable more efficient comparisons. Unfortunately individual diagnoses are not routinely given in the case notes until well into this period. Rosslynlee is the latest of my asylums in this respect, not giving a specific diagnosis to each patient in their case notes until 1922. Before this, the emphasis seems to have been on the aetiology of insanity rather than the form which that insanity took. The Annual Reports give tables of diagnosis but these cannot be linked to individual case notes, since no names are mentioned. However, the General Register of Admissions has been most helpful in this regard, since it usually gives a preliminary diagnosis. Any *post-mortem* and *cause of death* details are also recorded here.

TREATMENT

As with *symptoms*, *forms of treatment* are extracted from the progress notes, the prose section of the case notes. Of course not all patients are given treatment, while others have a combination of treatments. A foreign key links each individual to their treatments. The various forms have been coded to facilitate comparisons, with the main types of treatment being mercury, salvarsan, tryparsamide, malaria, quinine, and sedatives (including confinement to bed or to the padded room). Where the information is recorded, the *date* of each treatment is noted, and a further column has been added (*treatment order*) to retain the order of treatment where a date is not specified or is insufficiently precise.

Appendix 6: Medical Record Linkage



The General Register of Admissions records the initial admission details of patients, including their name, age, gender, marital status, and an initial cause and form of insanity. This diagnosis is particularly important in the period before diagnoses were routinely noted in the case notes.

The case notes provide most of the details recorded in the databases. At the end of the admitting physician's part of the case notes, a space is left for a diagnosis to be noted. This classification of diagnoses seems to be the one recommended by the International Congress of Alienists. However, it should be pointed out that we cannot be sure at which point this diagnosis is made during the patient's stay in the asylum. It is likely that this diagnosis is not made immediately on admission, since it can differ from the general register, and in a number of cases the diagnosis here is scored out and replaced with something else at some point during the patient's asylum stay. Thus diagnosis is not a static process, but ever changing as the patient progresses through their asylum stay.

In the case notes of the REA, a second diagnostic part is written into the proforma for Skae's diagnosis. This scheme was devised by David Skae in 1863 and depended principally on the bodily causation of insanity. Despite the hostility with which Skae's system of classification was received generally, Clouston defended it throughout his period of superintendence. The scheme was dropped at the REA *circa* 1910. The Rosslynlee case notes appear to have been modelled on the REA case notes, and they also contain a space for Skae's diagnosis. However, there is no entry in this space for any neurosyphilitic patient throughout this period.

The final part of the case notes concerns cause of death and a post-mortem diagnosis. This was not given for all patients who died in the asylum, but it does provide a very useful addition to the diagnostic process for those patients whose

diagnosis of neurosyphilis was not made until their death. In such cases, physicians may have long thought such patients *were* neurosyphilitic, yet not taken the trouble to note this in the case notes until death. On the other hand, post-mortem diagnosis may show that, for most of the patient's asylum stay, they were not conceived as neurosyphilitics, which might have, for example, affected the treatment they received.

Appendix 7: Sampling Procedure

Since my main sources, the case books, are too voluminous to be computerised in their entirety, I have resorted to analysing a sample rather than the whole neurosyphilitic population in those asylums which had a higher number of neurosyphilitics. I wished to be able to make statistically justifiable statements on each institution, and thus it was not necessary to analyse all cases. For Gartnavel and Rosslynlee, a sample was not necessary since the total number of neurosyphilitic patients resident over this period was only 160 and 176 patients respectively. However, the REA and Woodilee had, in this period, neurosyphilitic populations of 1541 and 828 patients respectively. The aim of sampling is to save time and effort, but also to obtain as far as possible consistent and unbiased estimates of the population. By taking care over the sample method and the calculation of results, I can with confidence estimate various characteristics of a body of documentary evidence after consulting what may appear to be a relatively small proportion of the case notes.

Systematic sampling is particularly useful when cases are recorded in an orderly manner in registers and lists. The result of this sample division will be an integer number, n. A random number between 1 and n is then selected. Beginning with this random number, the cases for the sample are extracted by thereafter taking every nth case in the population listing. Whereas in random sampling every item is selected by chance, in systematic sampling the selection of all other items after the first in the sample is predetermined by the sampling interval which has been adopted. In order to draw a 20% sample of tertiary syphilitic patients in the period from 1880 to 1930, I would select a random number between 1 and 5, and then pick every 5^{th} patient thereafter. This method also allows time stratification, as it ensures that the distribution of the sample matches the period.

There are two potential disadvantages: if the population contains a periodic type of variation then we may obtain a sample that is badly biased; and from the results of a systematic sample there is no reliable method of estimating the standard error of the sample mean. With simple random sampling, sample size may need to be disproportionately large to ensure that all subgroups, or strata, in the population are

adequately represented. Although GPI cases constituted by far the majority of neurosyphilitic cases in British asylums in this period, this fact must not be allowed to obscure those more unusual neurosyphilitic cases found, such as cerebral syphilis, juvenile GPI or syphilitic insanity. Systematic sampling designed to produce a 20 per cent sample would not have included many of the smaller diagnostic categories. Stratified sampling was thus necessary where small subgroups exist within the sampling frame, but other sampling techniques would produce too few cases to sustain much in the way of analysis. To draw a stratified random sample, the elements of a population are divided into non-overlapping groups. Samples are drawn from each of these, together forming the total sample. If the proportion of the sample taken from each stratum is the same as its proportion in the population, then the procedure is called proportionate stratified sampling, and the distribution of cases across the sample will match the population. In my case, however, this might have resulted in small strata of interest not being represented adequately in the final sample. This can be avoided by increasing sample size in all such strata. The result is disproportionate stratified random sampling. Here the sample will not match the population but will differ from it in known ways which can be corrected arithmetically. The method complicates statistical analysis, as the correct proportions have to be restored in the sample by weighting. Once this data is imported into SPSS, the samples can be weighted accordingly so as to rebalance this disproportional sampling.

For the purpose of sampling, populations can be thought of as consisting of sampling units, which are in this case different diagnostic categories. The REA neurosyphilitic population consists of 1416 GPI cases, 87 syphilitic insanity cases, and 38 GPI cases found at post-mortem, a total population of 1541. These sampling units are collections of elements which do not overlap and which exhaust the entire neurosyphilitic patient population. I am interested in those non-GPI cases – syphilitic insanity and post-mortem diagnosed GPI – and so wished to represent them more fully than a proportionate sample would allow. In order to get an adequate number of cases from these interesting subgroups, it is important to raise the size of the non-GPI sample.

I have thus arrived at this systematic stratified method of sampling, resulting in the following statistics for the REA:

Of the 38 post-mortem GPI cases, I retained every case – total 38.

Of the 87 syphilitic insanity cases, I took a 50% sample[1] – total 44.

Of the 1416 GPI cases, I took a 20% sample[2] – total 283.

Total sample – 365, which is 24% of all neurosyphilitic cases.

For Woodilee, I have used the same method to arrive at the following sample:

Of the 120 post-mortem GPI cases, I took a 25% sample – total 30.

Of the 7 Juvenile GPI cases, I retained every case – total 7.

Of the 701 GPI cases, I took a 25% sample – total 175.

Total sample – 212, which is 26% of all neurosyphilitic cases.

For the remaining institutions – Gartnavel and Rosslynlee – sampling was not an issue because the neurosyphilitic populations were small enough for me to do a 100% sample.

For Gartnavel:

Of the 9 post-mortem GPI cases, I retained every case – total 9.

Of the 1 cerebral syphilis case, I retained every case – total 1.

Of the 1 tabes dorsalis case, I retained every case – total 1.

Of the 149 GPI cases, I retained every case – total 149.

Total – 160, which is 100% of all neurosyphilitic cases.

For Rosslynlee:

Of the 131 post-mortem GPI cases, I retained every case – total 131.

Of the 45 GPI cases, I retained every case – total 45.

Total – 176, which is 100% of all neurosyphilitic cases.

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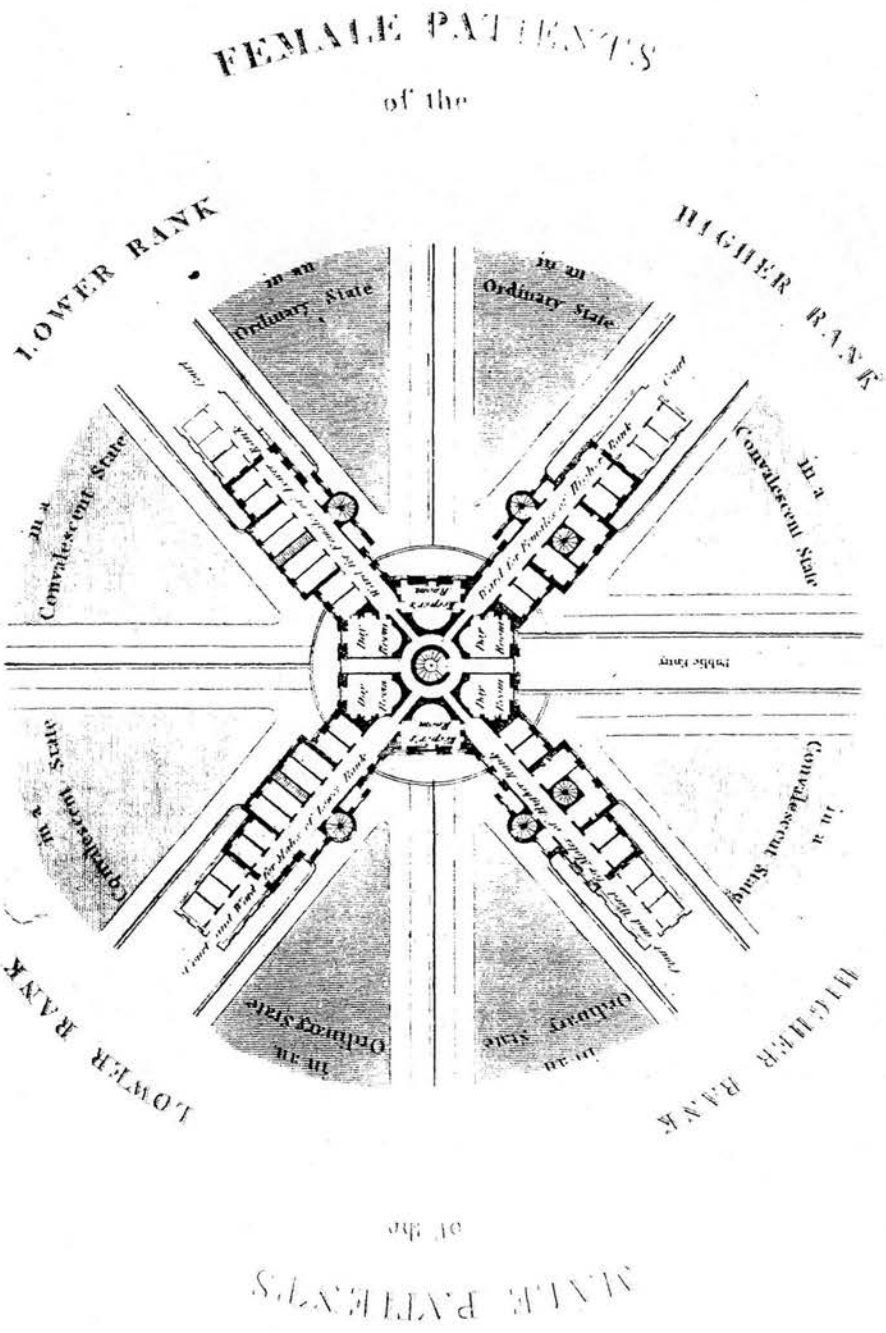
[1] A 50% sample consists of a 1 in 2 sample. I selected a random number between 1 and 2, which turned out to be 1; and then picked every 2nd patient thereafter, that is, the cases numbered 1, 3, 5, 7, and so forth.

[2] A 20% sample consists of a 1 in 5 sample. I selected a random number between 1 and 5, which turned out to be 3; and then picked every 5th patient thereafter, that is, the cases numbered 3, 8, 13, 18, and so forth.

Appendix 8: Stark's Plan of Design for Gartnavel, 1807



Source: W. Stark, *Remarks on the Construction of Public Hospitals* (Edinburgh, 1807).

Appendix 9: Biographies of the Physician Superintendents

David Yellowlees (1835-1921)

Yellowlees received his M.D. from Edinburgh University in 1857. After a period of study abroad, he returned as assistant to Sir William Tennant Gairdner at the Edinburgh Royal Infirmary. His first appointment to psychiatry was to assist Skae at the REA, before going on to become Assistant Physician and then Superintendent at Glamorgan County Asylum in 1863, then Resident Surgeon and Resident Physician at the Edinburgh Royal Infirmary.

In 1874, Yellowlees became Physician Superintendent of Gartnavel. In 1890, he was elected President of the MPA. He was also on the Directing Board of the Association for the Relief of the Incurable, the Bramhill Home for Incurables, Glasgow Lock Hospital, and the Lanfine Home for Consumptives. He furthermore helped establish the Glasgow Association for the care of Defective and Feeble-Minded children. He was also made a Licentiate of the Royal College of Surgeons of Edinburgh, as well as a Fellow of the Faculty of Physicians and Surgeons of Glasgow.

Yellowlees was the first Lecturer in Mental Diseases at the University of Glasgow in 1880. It was the prospect of a lectureship in mental disease at the University that had most of all attracted him to the Gartnavel post. Prior to his appointment, psychiatric teaching had been subsumed within the course on general medicine and the lectures given by Gairdner, Professor of Medicine. Gairdner was supportive of Yellowlees, however, and was willing to give up his own few lectures in Yellowlees' favour.[3] There was clearly some resistance amongst the University Medical Faculty to the acceptance of mental diseases as a legitimate lectureship, if only for fear that their territory was being invaded. When Yellowlees applied for the use of a university classroom in which to teach his first course, it was approved only on the condition that his teaching would be:

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[3] J. Andrews and I. Smith, 'The Evolution of Psychiatry in Glasgow During the Nineteenth and Early Twentieth Centuries', in H. Freeman and G. Berrios (eds), *150 Years of British Psychiatry*, volume one (London, Athlone, 1996), p.319.

> without prejudice to the rights and privileges of the chairs of the Practice of Medicine and of Forensic Medicine or to those of any other chair embracing the subject of Insanity.[4]

Indeed, Yellowlees was required to keep to the clinical material supplied by his own work at Gartnavel. Nor were students initially bound to attend his lectures. However, Gairdner was soon to discontinue his 'few lectures' on insanity in deference to Yellowlees, whose teaching involved clinical demonstration as well as formal lectures. Gairdner records that these courses were well attended, although not compulsory. The final form of Yellowlees' course was a series of twelve short lectures which were, in part, simply 'afternoon clinics'. It was not until 1892 that attendance at Yellowlees' lectures became compulsory, as a result of new legislation governing medical education.[5]

Yellowlees also made a significant contribution to asylum nursing. The need to raise the calibre and prestige of mental nursing was recognised increasingly by medical personnel, both within and outwith asylums. A 13-strong sub-committee from the Scottish wing of the MPA, which included Yellowlees, was appointed in 1884 to investigate the question of training for asylum attendants. In the following year, it produced the *Handbook for the Instruction of Attendants on the Insane*. A convenient pocket-sized manual of conduct for attendants, it was to prove such a popular part of asylum life that it was revised through seven editions, when in 1923 it was renamed *Handbook for Mental Nurses.* This edition remained the standard work on the subject until 1954. Included in its text was a wide variety of advice, both medical and managerial, on bodily functions, nutrition, care of the sick, mental disorders, nursing management, and the duties and conduct expected of attendants. Another MPA Committee appointed to look at the systematic training of attendants reported back in 1890, recommending an initial three-month probation period for prospective trainees, followed by a broad two-year training. Most importantly, the Committee proposed that examinations and certificates of proficiency be introduced

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[4] J. Andrews and I. Smith (eds), *'Let There be Light Again': A History of Gartnavel Royal Hospital from its Beginnings to the Present Day* (Glasgow, Gartnavel, 1993), p.65.
[5] *Ibid.*, pp.65-6.

for asylum nurses.[6] Yellowlees continued as Lecturer in Mental Diseases and Gartnavel Physician Superintendent until 1901, retiring due to failing eyesight.

Thomas Clouston (1840-1915)

Clouston took his medical degree at Edinburgh University, attending lectures by two men who were to influence him greatly – David Skae and Thomas Laycock. These lectures were not compulsory, and it gives some indication of Clouston's enthusiasm for the subject that he did in fact attend them. Having completed his medical studies in 1860 and working for a spell as a demonstrator in anatomy, Clouston began work as an Assistant Physician with Skae at the REA in 1861. Clouston's colleagues at the Asylum were John Sibbald, who had drawn the illustrations for his thesis, and David Yellowlees.[7] Both remained his lifelong friends and both achieved some eminence in their field – Sibbald as a Commissioner in Lunacy, and Yellowlees as Physician Superintendent of Gartnavel. After briefly joining Skae's REA staff, Clouston was appointed Medical Superintendent of Cumberland and Westmorland Asylum, Carlisle, at the age of twenty-two, where he remained for ten years.

After Skae's death in 1873, Clouston was recalled to the REA as Physician Superintendent, which was to become his vocation for the next 35 years. He was also appointed first official Lecturer in mental diseases at the University of Edinburgh in 1879. When Clouston was appointed to this post, it was the culmination of a campaign which had begun in the early part of the century to achieve academic recognition for the study of insanity. In 1823, Sir Alexander Morison had approached the University to create a chair in mental diseases, with himself as the occupant. The request was rejected, and similar approaches by Morison to the REA, the Royal College of Physicians, and the town council also failed. Undeterred, Morison went ahead anyway with a lecture course, and has since been given credit for instituting the first course of formal lectures in mental diseases in Britain, beginning in 1823 to an audience of six people. According to Clouston,

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[6] *Ibid.*, p.85.

[7] A. Beveridge, 'Thomas Clouston and the Edinburgh School of Psychiatry', in G. Berrios and H. Freeman (eds), *150 Years of British Psychiatry, 1841-1991* (London, Gaskell, 1991), p.362.

Dr. William McKinnon, the first Superintendent of the REA, had provided elementary lectures for medical students during his period of office. In 1850, the Royal College of Physicians of Edinburgh passed a motion suggesting that formal instruction in mental disease should be provided at the REA. The Asylum Board of Management eventually approved the scheme, and in 1853, Skae, who had succeeded McKinnon, gave his first lecture. Skae's course involved a clinical lecture on a Saturday and thrice-weekly tours of the Asylum in the company of one of the Medical Officers, who would demonstrate interesting patients. By Clouston's time, Skae was giving two lectures weekly but the Asylum visits had been reduced to one per week.[8]

Clouston's new appointment as official Lecturer both integrated and legitimised psychiatry as an official part of Edinburgh University's medical curriculum. This teaching appointment, linking academic and clinical psychiatry, gave him an unrivalled professional reputation. His lectures became mandatory for all Edinburgh medical students in 1884.[9] His *Clinical Lectures on Mental Diseases* went through six editions between 1884 and 1906, and was the recognised textbook on psychiatry for medical students. During his tenure, Clouston fought to make the study of mental diseases part of the medical curriculum, and in 1890 he put this to the Scottish Universities Commission. In 1893, psychiatry was made a compulsory subject for all medical students by the General Medical Council.[10]

For 35 years, Clouston combined the post of managing Scotland's largest and most prestigious asylum with a career as a writer of a multitude of books, papers, and popular articles. Clouston was a prolific author, his numerous and varied works including *The Study of Mental Disease* (1879); while his later works stressed mental hygiene in addition to purely environmental theories, including *The Neurosis of Development* (1890) and *The Hygiene of Mind* (1906). Even his Annual Reports were reported by the press with great interest. Clouston also became President of the Medico-Psychological Association in 1888, and was largely responsible for

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[8] *Ibid.,* pp.369-370.
[9] M. Thompson, 'The Wages of Sin: The Problem of Alcoholism and General Paralysis in Nineteenth-Century Edinburgh', in W. Bynum, R. Porter and M. Shepherd (eds), *The Anatomy of Madness: The Asylum and Psychiatry*, volume three (London and New York, Routledge, 1988), p.111
[10] Beveridge, 'Thomas Clouston', p.374.

founding the first Scottish Asylum Laboratory. He retired in 1908, with a knighthood following in 1911.

Landel R. Oswald (1861-1928)

Those on Yellowlees' medical staff at Gartnavel appear to have been committed to psychiatry and fairly successful in their offices.[11] Landel Rose Oswald served as an assistant under Yellowlees for five years, and was to succeed Yellowlees as Physician Superintendent in 1901. After working in an apothecary's shop, he graduated in medicine from Glasgow University. He received his M.B. in 1888, and subsequently spent a year as Assistant House Physician to Sir William Gairdner, who influenced his choice of psychiatry as a career.[12] He was then appointed to the staff of Gartnavel, training under Yellowlees, before spending a short period travelling in the United States and Germany. In 1895, he was appointed Physician Superintendent of the newly-built Glasgow District Asylum at Gartloch. He remained there until 1901, when he returned to Gartnavel to be appointed Physician Superintendent.

Oswald also succeeded Yellowlees as the second Lecturer in Insanity at the University of Glasgow in 1904. In this capacity, Oswald gave ten systematic lectures and eight clinical demonstrations during the summer session to fourth-year medical students.[13] At the University of Glasgow, the teaching of psychiatry occupied an insignificant part of the medical curriculum. The Lecturer in Psychiatry was not a member of the Faculty of Medicine. However, immediately after the end of the Great War, the number of medical undergraduates increased, and the class-room was crowded with two hundred or more students, some of whom came to recognise that psychiatry might prove an interesting and worth-while career.[14] A beginning was also made with post-graduate instruction in psychiatry. By 1917,

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[11] J. Andrews, 'A Failure to Flourish? David Yellowless and the Glasgow School of Psychiatry', *History of Psychiatry*, 8 (1997), p.201.
[12] D. Henderson, *The Evolution of Psychiatry in Scotland* (Edinburgh and London, E. and S. Livingstone, 1964), p.65.
[13] *Ibid.*, p.200.
[14] *Ibid.*, p.217.

Glasgow was the only University in Scotland to have an endowed scholarship in aetiological research into insanity.[15]

Oswald was largely responsible for establishing the Scottish Western Asylums' Research Institute in 1909 within the grounds of Gartnavel. Under Oswald, Gartnavel also established the first psychiatric clinic attached to a general hospital in the West of Scotland, with the establishment in 1910 of the psychiatric out-patients clinic at Glasgow's Western Infirmary, to which Oswald himself was appointed as Consulting Physician. Indeed, the success of this venture was in marked contrast to the situation in Edinburgh. Calls there for a psychiatric clinic dated back to the 1870s, culminating in a concerted effort in 1902 by the city's most prominent alienists, which however failed to convince the managers of the Edinburgh Royal Infirmary. Thus, while Edinburgh alienists had to rely on teaching at the REA and the extramural clinic at Stirling, the asylums of Glasgow could call upon the services of a centrally based out-patient clinic.[16] Henderson felt this to be an immensely important service:

> It is to encourage people to understand that incipient mental disorder can be satisfactorily treated extra-institutionally that Out-Patient Departments for Mental Disorders in connection with General Hospitals … are so important. For instance, in connection with the Out-Patient Psychiatric Department of the Western Infirmary, approximately 80 patients have sought advice there since it was restarted a little over one year ago, and in only two cases has it been found advisable to recommend institutional treatment. On the other hand, many patients who might otherwise have tended to drift towards more profound forms of mental disorder have been helped and encouraged to meet their difficulties.[17]

Oswald was a prime mover in introducing female nurses into the male wards, and in ensuring that Gartloch was the first asylum to build a separate nurses' home.[18] He also distinguished himself through his introduction of verandah and tent therapy, based on an American model. Yet despite his early promise as a scholar and his prolific career as Physician Superintendent and Lecturer, Oswald published scarcely

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[15] Andrews and Smith, 'The Evolution of Psychiatry', p.327.
[16] *Ibid.*
[17] *110th Glasgow Royal Asylum Annual Report*, 1923, GGHB13B/2/224, pp.19-20.
[18] Andrews and Smith, 'The Evolution of Psychiatry', p.327.

anything of note. He did, however, hold many other appointments, including President of the Section for Nervous and Mental Diseases of the British Medical Association; President of the West of Scotland Medical Association; and he served on a Royal Commission to report on the mental condition of the school children of Glasgow. He retired in 1921.

George M. Robertson (1864-1932)

Robertson received his M.B. Ch.B. from the University of Edinburgh in 1885. He then worked in the pathology laboratories of the University as an assistant to Clouston at the REA, before becoming Physician Superintendent of Perth District Asylum (1892), Stirling District Asylum (1899), and finally the REA (1908) when Clouston died.

Robertson made many important and vital improvements in developing the REA. He wanted to 'de-asylumise' such institutions in order to put them on a par with the best general hospitals.[19] During the Great War, he asked his Board of Managers to establish nursing homes where patients suffering from incipient mental disorders could be watched. The Managers accordingly purchased homes in Edinburgh and opened them as private nursing homes, staffed with matrons and hospital-trained nurses. However, these inmates were mainly drawn from the upper classes. The success of this scheme was such that ten years later the Managers built and opened Jordanburn Nerve Hospital, where patients of all social ranks could be received for examination and treatment.[20] One of its chief features was the provision of an out-patient as well as an in-patient Department. From its opening, this Hospital was run in conjunction with the Mental Out-Patient Clinic at the Royal Edinburgh Infirmary, a clinic which opened in 1923 upon Robertson's appointment as first occupant of the post of Physician-Consultant in Psychiatry to that hospital.[21]

Among his other notable achievements, Robertson was active in improving the status of the mental nurse. Throughout the nineteenth and early-twentieth centuries, nurses' hours were particularly long and arduous. These hours, combined

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[19] See G. Robertson, 'The Hospitalisation of the Scottish Asylum System', 1922, LHB7/14/10.
[20] 'Obituary of George Matthew Robertson', *Lancet*, 1 (1932), p.805.
[21] 'Obituary of George Robertson', *Edinburgh Medical Journal*, 39:6 (1932), p.401.

with a high level of discipline imposed upon staff, meant that they were rarely allowed time off, or formal leave days away from the Asylum. The nursing arrangements at Craig House and West House for male and female patients were the responsibility of the chief male nurses and matrons respectively. That arrangement persisted until 1909, when Robertson appointed a Lady Superintendent who possessed a combined training in general and mental hospital nursing, to be responsible for all the arrangements for the nursing care of both male and female patients. During day-time the number of nurses on duty was sufficient, but at night-time there was a considerable shortage which was compensated for by the prescription of sedatives and by the use of locked rooms.[22] Robertson was convinced that those who occupied the responsible position of Matron or Assistant Matron should have a dual training in general and mental hospitals, and that they should be employed in the male, as well as the female, wards.

In 1912, Robertson was responsible for instituting a post-graduate course for the Diploma of Psychiatry. Taught by himself, the course of study extended over one academic year, and included instruction in Anatomy of the Nervous System, Physiology, Histology, and Chemistry of the Nervous System, Pathology of the Brain and Nervous System, Practical Bacteriology in its relation to Mental Diseases, and Clinical Psychiatry. The Summer Session covered Systematic and Clinical Psychiatry, Psychology, including Experimental Psychology, and Clinical Neurology.[23] In 1919, the Board of Managers of the REA endowed a Chair of Psychiatry in the University of Edinburgh, of which Robertson became the first occupant as Lecturer on Mental Diseases. The University of Edinburgh was the first in Scotland to establish a Chair of Psychiatry, which for clinical and teaching purposes was conjoined with the post of Physician Superintendent of the associated asylum.[24] Robertson believed that the only way to teach psychiatry was to bring students into intimate contact with actual cases of insanity, so he not only gave clinical demonstrations but also made his students attend in the wards of the REA.[25] He was, furthermore, elected President of the MPA in 1922, and President of the

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[22] Henderson, *The Evolution of Psychiatry*, p.143.
[23] *Edinburgh University Calendar,* 1911-1912, GD16, p.603.
[24] Henderson, *The Evolution of Psychiatry*, p.220.
[25] 'Obituary of George Matthew Robertson', p.805.

Royal College of Physicians (1925-7). He retired from the REA in 1932, the year of his death.

David K. Henderson (1884-1965)

David Henderson graduated from the University of Edinburgh with his M.B. Ch.B. in 1907, and M.D. in 1913. After he qualified, he decided to specialise in psychiatry, and became a Medical Officer at the REA under Clouston. Later, he widened his experiences by undertaking clinical work and postgraduate study at various centres of excellence in London, Munich, New York, and Baltimore. He worked with Adolf Meyer at the New York Psychiatric Institute between 1908 and 1911, during which time he had the opportunity not only of doing special work along both clinical and pathological lines, but also of studying at first hand the methods of the care and treatment of the insane and the general administration of the New York State Hospital system, which at that time was considered to be unrivalled.[26]

In 1911, Henderson spent several months in Munich at the Royal Psychiatric Clinic, working under Emil Kraeplin. The following year, he returned to America to work with Meyer, this time as Senior Resident Physician at the Henry Phipps Psychiatric Clinic within the Johns Hopkins Hospital in Baltimore, where he remained until 1915. Here, he took part in teaching and organisation, and particularly interested himself with the establishment of workshops and the occupational training of patients. That year he returned to Gartnavel, only to have his employment there interrupted again, this time with secondment as an army alienist during the Great War. Henderson served as a major in the R.A.M.C. and published a series of papers on psychological disorders of warfare. After demobilisation, he became Senior Assistant at Gartnavel, by which time he had already published at least sixteen articles out of the rich fruits of his clinical experience.[27]

In 1921, Oswald decided to resign on account of ill-health. Henderson was invited to succeed him as both Gartnavel Physician Superintendent and Lecturer in

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[26] 'Obituary of D.K. Henderson', *British Medical Journal*, 1 (1965), p.1194.
[27] Andrews and Smith, *'Let There be Light Again'*, p.73.

Psychiatry at the University of Glasgow. Henderson became the most famous and successful alienist associated with Gartnavel – a figure who once more emphasises the links rather than the divisions between Edinburgh and Glasgow psychiatry.[28] In part, Henderson continued and supplemented Oswald's work at Gartnavel, building on the Asylum's links with the Western Infirmary's clinic and with general practitioners in Glasgow, and was to implement what Oswald had merely proposed in respect to a programme of mental hygiene.

Henderson was also to make radical changes at Gartnavel. He brought his American work experience with him and implemented in Glasgow some of the latest initiatives in psychiatric medicine, gleaned from his periods studying under Meyer and Kraepelin. In fact, in his daily practice, he acknowledged a great debt to Meyer. It was his interpretation of Meyer's psychobiology that prompted Henderson to insist on his physicians making a thorough appraisal of their patients' social histories; and it was this which led him to be a pioneer in the employment of psychiatric social workers and occupational therapists in his clinical services. Henderson established Scotland's first Occupational Therapy Department, and introduced consulting staff to the Asylum, including a dentist and psychologist, each with their own report contained within the Annual Reports. He, furthermore, introduced case folders, overhawled the classification system used in Gartnavel, and published the popular textbook *A Textbook of Psychiatry for Students and Practitioners* with R. Gillespie, which extended to ten editions. In 1932, Henderson was appointed to the post of Physician Superintendent of the REA, a post which he held until he retired in 1954. In his retirement, he continued to write, only a year before his death publishing *The Evolution of Psychiatry in Scotland.* In recognition of his great services to psychiatry, he was knighted in 1947.

On the other hand, there were limits to his achievements. Throughout his superintendence, Henderson lobbied vigorously for the establishment of a special clinic for the early treatment of acute and milder forms of insanity. However, he ultimately failed to persuade any benefactor to donate the funds required to set up such an institution, and left Gartnavel to take up the more prestigious post of

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[28] Andrews and Smith, 'The Evolution of Psychiatry', p.328.

Physician Superintendent at the REA and Lecturer in Psychiatry at the University of Edinburgh. Yet his ambitions were to be pursued and realised within a few years of his appointment by his protégé and successor as Superintendent, Angus MacNiven. Nurtured like Henderson on the example of the Johns Hopkins Clinic, MacNiven was just as convinced of the need for a Psychiatric Clinic or 'Treatment Centre' in Glasgow. In 1934, after a sustained campaign, the Lansdowne Clinic was inaugurated for the treatment of the psycho-neuroses, receiving 186 referrals within the first eight months of its opening in 1935.[29]

[29] *Ibid.*, p.330.

Appendix 10: Woodilee Proforma Diagrams

6

Yes X
No —

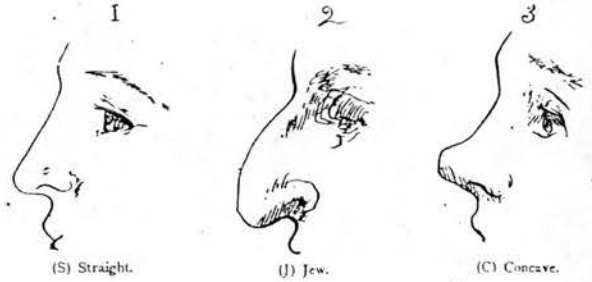
CRANIAL MEASUREMENTS, ETC.

CEPHALIC INDEX.—The length of the Cranium is measured from the Glabella to the Occipital Protuberance. The standard length = 100. The breadth is the greatest inter-parietal breadth, *i.e.* between the tubera parietalia. The Cephalic Index is got by multiplying the standard length by the actual breadth, thus:—

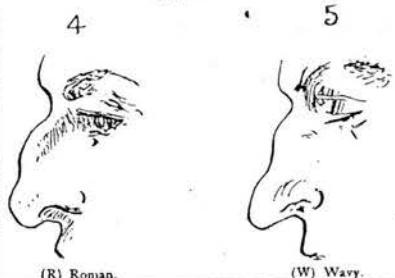
$\frac{100 \times \text{Breadth}}{\text{Length.}}$ = Cephalic Index.

NOTE.—Skulls with Cephalic Index above 80 are Brachycephalic; from 75 to 80 Mesaticephalic; and below 75 Dolichocephalic. Other Indices are taken in a manner similar to the Cephalic Index.

The Face may be defined as the visible forepart of the Head. The Face includes the Brow. The Upper Face is that portion of the Face above the horizontal line passing through the middle of the nose.



Nose.
Length. 5·5
Breadth. 3'
Profile. ~~S.~~ J. W.



FACE.	Long and Narrow.	Short and Broad.	Medium.	Length. 18·9	Upper Face. Length 9·2
	Breadth.	Inter Ocular. Breadth.	Bigonial. Breadth.	Cheek Bones. Inconspicuous.	Prominent. X
Skin.	Pale.	Ruddy. X	Dark.	Freckled.	Pigment Spots—few

Expression (Coarse and Fine Facial Movements).		Number of Lantern Slide.	Number of Photo. Neg.
			Number and Page in Photo. Book.

Gestures.			Chin.	
Gait.			Projecting.	Retreating. Abnormality
Attitude.				+
Wrinkles.	Few on forehead			

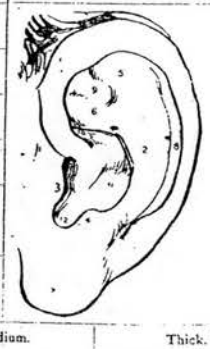
	Dark.		Medium.		Light.		Iris.		Palpebral Fissure.	
	Dark Brown.	Light Brown.	Dark Grey.	Green.	Light Grey.	Blue.	Flecks on.	Irregular Colouring.	Normal.	Abnormal
EYES.						+	—	—		

Eyesight.			Special Defects of Eyes.
Right Eye.	Left Eye.	Colour Sense.	

EARS.

Flat.	×
Outstanding.	
Coarse.	
Finely Moulded.	×
Asymmetry.	
Lobes. Present.	×
Lobes. Absent.	

NORMAL EAR.



1. Helix.
2. Antihelix.
3. Tragus.
4. Antitragus.
5. Crus Superius.
6. Crus Anterius.
7. Lobule.
8. Fossa Scaphoidea.
9. Fossa Ovalis.
10. Fossa Cymbae.
11. Concha.
12. Incissura Intertragica.
13. Orifice of External Meatus.

Anomalies other mentioned.

Right.

LIPS.

Thin.	Medium.	Thick.	Hare Lip.	Transverse F
	×			

TONGUE.

Macro-glossus.	Micro-glossus.	Asymmetrical or Bifid Tongue.
×		

TEETH.

Number—See Palate.

Large. Small.	Projecting. Mis-placed.	Other Anomalies.
×		

Nose.

Lateral Deviation.	
Absence.	
Defective Ossification.	
Atresia, etc., of Fossal.	

Anomalies of Uvula.

HARD PALATE.

Number of Cast.

General Notes on Hard Palate.

Normal.

Abnormal.

Bite.

Cleft Palate.

Type. High & narrow

HEAD.

Length.	Breadth.	Height.	Shape.	Other Anom
18·8	15·5	14·1		

Height.	Weight.	Span.	Breathing Power.	Strength in lbs.
5′ 7″	141 4lb			

	Full as archer.		Squei
	Right Hand.	Left Hand.	Right Hand

HAIR.

Red.	Flaxen.	Light Brown.	Dark Brown.
			×

Black.	Straight.	Wavy.	Curly.
		×	

Cephalic Index.		Total Facial Index.	
Nasal Index.		Upper Facial Index.	

Anomalies of Limbs.	Anomalies of Genitals.	Anomalies of Skin.

General Bodily Anomalies.

Reaction. Time, Etc.

Appendix 11: The Recorded Causes of GPI in the REA

Table 9.1 REA Predisposing and Exciting Causes of GPI, 1880-1910

	Predisposing (%)	Exciting (%)
Unknown	117 (51%)	75 (33%)
Syphilis	22 (10%)	28 (12%)
Alcohol	14 (6%)	47 (20%)
Heredity	44 (19%)	1 (0%)
Physical Disease	9 (4%)	15 (7%)
Brain Disease	7 (3%)	28 (12%)
Shock/Grief/Stress	17 (7%)	23 (10%)
GPI	0 (0%)	13 (6%)

n=230 Source: *REA Case Books*, 1879-1910, LHB7/51/34-94.

Table 9.2 REA Predisposing and Exciting Causes of GPI, 1911-1930

	Predisposing (%)	Exciting (%)
Unknown	77 (85%)	85 (93%)
Syphilis	9 (9%)	2 (2%)
Alcohol	2 (2%)	3 (3%)
Heredity	0 (0%)	0 (0%)
Physical Disease	0 (0%)	0 (0%)
Brain Disease	0 (0%)	0 (0%)
Shock/Grief/Stress	3 (3%)	1 (1%)
GPI	0 (0%)	0 (0%)

n=91 Source: *REA Case Books*, 1911-1931, LHB7/51/91-120.

Appendix 12: The Recorded Causes of GPI in Three Scottish Asylums

Table 9.3 Admission Register and Case Notes Causes of GPI in Gartnavel, Rosslynlee and Woodilee, 1880-1910

	Admission Registers	Case Notes
Unknown/Not Given	211 (75%)	179 (64%)
Syphilis	2 (1%)	9 (3%)
Alcohol	13 (5%)	21 (7%)
Heredity	6 (2%)	3 (1%)
Physical Disease	5 (2%)	10 (4%)
Brain Disease	7 (3%)	19 (7%)
Shock/Grief/Stress	17 (6%)	18 (6%)
GPI	20 (7%)	27 (10%)

n=280 Source: See p.291.

Table 9.4 Admission Register and Case Notes Causes of GPI in Gartnavel, Rosslynlee and Woodilee, 1911-1930

	Admission Registers	Case Notes
Unknown/Not Given	216 (81%)	119 (45%)
Syphilis	11 (4%)	80 (30%)
Alcohol	4 (2%)	18 (7%)
Heredity	0 (0%)	4 (2%)
Physical Disease	10 (4%)	11 (4%)
Brain Disease	5 (2%)	10 (4%)
Shock/Grief/Stress	18 (7%)	20 (8%)
GPI	6 (2%)	28 (11%)

n=266 Source: See p.291.

Appendix 13: A Brief History of 'Pseudo-GPI'

From the late nineteenth century onwards, such terms as *parasyphilis*, *metasyphilis* and *pseudo-GPI* were utilised by alienists to relate syphilis and GPI without having to accept the syphilitic hypothesis wholesale. The term *parasyphilis* referred to a group of conditions (of which GPI and tabes dorsalis were the most numerically important) which were syphilitic in cause but not in nature. The concept was developed by Alfred Fournier. In the 1870s he published evidence favouring the hypothesis that syphilis was a cause of both GPI and tabes dorsalis. However, he hesitated to suggest a firm link between GPI and syphilis since he considered the figures of antecedents unconvincing. He suggested the term *parasyphilis* to designate such late manifestations which, he thought, were only indirectly caused by the syphilitic virus, since they proved resistant to treatment with mercury.[30] Moore added two other reasons to justify the term *metasyphilis* (preferred by German authors): in spite of a diligent search, no spirochaete had yet been found in the nervous system or in other organs of general paralytics. He felt it possible that they did exist, but in a form altered both as to morphology and toxicity. Secondly, the long interval between initial syphilitic infection and GPI caused him to lean further towards the *metasyphilitic* theory.[31] Until the second decade of the twentieth century, *parasyphilis* therefore proved a useful and convenient concept to alienists. Most significantly, it did not represent a move to a specific theory of GPI. Rather, true to the alienists' epistemology of the GPI aetiology, it represented a multifactorial theory. The concept of *parasyphilis* proved a popular concept until the 1910s, suffering a severe setback in 1913 when Hideyo Noguchi and J. W. Moore demonstrated the presence of spirochaetes in the brain of patients dying of GPI.

The other term made use of in the period to facilitate the linking of syphilis and GPI was *pseudo-GPI.* The GPI cases which Scandinavian studies linked to syphilis were, Fournier claimed, nothing more than good imitations of GPI by

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[30] A. Fournier, *Les Affections Parasyphilitiques* (Paris, Rueff et Cie Editeurs, 1894), p 225, cited in E. Lomax, 'Infantile Syphilis as an Example of Nineteenth Century Belief in the Inheritance of Acquired Characteristics', *Journal of the History of Medicine*, 34 (1979), p.36.

[31] J. Moore, 'The Syphilis-General Paralysis Question', *Review of Neurology and Psychiatry*, 8 (1910), p.268.

tertiary syphilis or *pseudo-general paralysis of syphilitic origin.*[32] This model - in which true GPI was opposed to *syphilitic pseudo-GPI*, became known as the 'duality' theory. In separating GPI from the realms of direct syphilitic pathology, however, Fournier did not exclude the possibility of some connection between the two. The creation of the special term *pseudo-general paralysis* to name that GPI caused by syphilis illustrates the fact that there was substantial resistance to accepting the fact that the clinical states exhibited by syphilitics constituted instances of GPI, a point which Berrios berates historians of psychiatry for missing.[33] Not only was there reluctance to attribute syphilis as the *sole* cause of GPI, but there was the creation of the term *pseudo-GPI* to account for those cases of GPI which *were* caused by syphilis. Thus the use of prefixes like *para, meta* and *pseudo* allowed various theories to co-exist, and GPI and syphilis to be related without alienists having to commit to syphilis as the definitive or single cause of GPI. As a further possible interpretation, it could be argued that the concept of *pseudo-GPI* was invented as a kind of 'trojan horse', for the syphilitic theory to first gain acceptance. It might then be easier to get rid of the *pseudo* term and for alienists to accept a clear and straightforward link between syphilis, GPI and tabes. As Quétel observes, post-Noguchi and Moore's discovery, 'the interesting problem of the authentic cases of pseudo-general paralysis disappeared'.[34]

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[32] *Ibid.*, pp.337–8.
[33] G. Berrios, '"Depressive Pseudodementia" or "Melancholic Dementia": A Nineteenth Century View', *Journal of Neurology, Neurosurgery, and Psychiatry*, 48:5 (1985), p.398.
[34] C. Quétel, *History of Syphilis* (Cambridge, Polity Press, 1990), p.164.

Appendix 14: The Toxin Theory of GPI

By the early twentieth century, theories of a toxin had become a popular explanation of the aetiology of late syphilitic manifestations. As the REA pathologist Ford Robertson observed:

> Dr. G. Douglas McRae, Dr. John Jeffrey and myself have advanced the hypothesis that general paralysis is the result of a chronic toxic infection from the respiratory and alimentary tracts, permitted by general local impairment of the defences against bacteria and dependent upon the excessive development of various bacterial forms, but especially upon the abundant growth of a diptheroid bacillus which gives the disease its distinctive character.[35]

Gartnavel Physician Superintendent Yellowlees expressed great interest in this view as to the bacterial origin of GPI, but was not yet disposed (in 1903) to accept it in the face of clinical evidence. However, Clouston had more confidence in the theory. In his pamphlet 'Toxins and Microbes', he stated:

> Modern Medicine has lately discovered that we are subject to be invaded by all sorts of microbes and by many kinds of poisons that are adverse to the general health and to the brain soundness .... The brain becomes thus poisoned by microbes and by toxins, as we now call such poisons, which ought to be got rid of or counteracted in some way .... We doctors are always suspicious now that certain cases of hallucinations are 'toxic' in origin and that certain delusions, especially those of suspicion, have some such bodily cause. In lecturing to my students in the Edinburgh University I always lay down the principle 'Try and find out a bodily and especially a toxic cause for the delusions and hallucinations of your patients.' We, at Morningside at least, now believe that General Paralysis – that most terrible of all brain diseases we have to treat – is caused by poisons and microbes.[36]

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[35] W. Ford Robertson, 'Discussion on the Pathology of General Paralysis of the Insane', *British Medical Journal*, 2 (1903), p.1066.

[36] T. Clouston, 'How the Scientific Way of Looking at Things Helps us in our Work', 1908, LHSA, LHB7/14/8, p.9.

This toxin theory thus quickly found its way into aetiological conceptions of GPI, at least in areas where laboratory work was available to investigate it. Edinburgh alienists, in particular, were keen to support and incorporate Ford Robertson's findings into their epistemology of GPI. As Clouston stated:

> Now-a-days 'clinical pathology' is becoming a routine part of the doctor's work of diagnosis and treatment. The other day I was discussing the diagnosis of an obscure case of general paralysis with Dr McRae, and his concluding remark was, 'It must be general paralysis, for I have been over to the Laboratory and have found the characteristic diptheroid bacillus.'[37]

The alienists of Crichton Royal Institution in Dumfries also received Ford Robertson's investigations enthusiastically. Strong support was given to his hypothesis by the observation that this bacillus was capable of producing in rats a fatal nervous disease characterised by changes in the brain and spinal cord corresponding to those found in GPI. The 1903 Crichton Annual Report concluded: '[Ford Robertson's theory] is one of the most important contributions to our knowledge of nervous pathology that has been made during the year'.[38] Similarly, Bangour District Asylum alienists found:

> Not only has [Ford Robertson] isolated the bacillus from the blood and cerebro-spinal fluid of patients suffering from the disease, but cultures have produced in lower animals changes in the nervous system like those which occur in general paralysis in man.[39]

A rash of newspaper articles around 1903 reported on Ford Robertson's findings, claiming that considerable interest had been aroused by his work. Clouston's wholesale support must have helped, as must that of his successor, George Robertson, who:

> was very pleased to be able to say he could confirm, right up to the hilt, Dr. Ford Robertson's original theory that general paralysis was associated with a diphtheroid organism.[40]

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[37] *92nd Royal Edinburgh Asylum Annual Report*, 1904, LHB7/7/11, p.21.
[38] *64th Crichton Royal Institution, Dumfries, Annual Report*, 1903, LHSA GD17/1/39, pp.11-12.
[39] *Edinburgh Lunacy District Report on Bangour Village*, 1906-7, LHSA GD17/1/42, p.16.
[40] 'Discussion', *Journal of Mental Science*, 53 (1907), p.609.

He and others had been, during 1906 and 1907, making an important series of observations in the laboratory of Stirling District Asylum, which confirmed Ford Robertson's original thesis.

However, based mainly on the fact that the micro-organism was not found uniformly in all GPI cases examined, Ford Robertson's conclusions were received with scepticism and outright criticism in certain quarters. Investigations similar to those Ford Robertson undertook in 1902 were carried out in London, and the results were by no means convincing. Ford Robertson found the diphtheroid bacillus in only nine out of twenty-three cases of GPI, which was not considered sufficient to 'support the theory – though it may lend colour to it – that the presence of the micro-organism in question was actually the cause of the malady'.[41] Dr. C. E. Beevor said that it seemed to him that if the bacillus was the cause of the disease, then it ought to be found in all cases of GPI, and also in all cases of tabes. Yet this was not the case. And if Ford Robertson's view was correct, the bacillus ought not to be found in healthy people, or in cases of other diseases. Yet it was found in such circumstances.[42] Moreover, if injected into animals, it ought to produce the disease in them. However, as far as Beevor could gather, the symptoms which had been caused by such injections were not those of GPI. In 1904, Greenlees claimed that Ford Robertson had to abandon his bacillus theory completely, because the toxin was found in non-paralytics also. That Ford Robertson subsequently received little enthusiastic or widespread support, but was in fact the subject of much adverse criticism, seems to have been further because although he had evolved several 'very plausible and ingenious arguments' in favour of his theory, he had not brought forward any new facts or observations to discredit syphilis as the cause.[43] Few cases were recorded which bore out his view, relative to the thousands which had and were contributing to the statistics upon which the syphilis hypothesis was founded.[44]

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[41] 'The Bacillus of Paralysis: Medical Opinion', *Royal Edinburgh Asylum Presscuttings Book*, volume 6, 1906, LHB7/12/6, p.76/20.
[42] 'Discussion', p.608.
[43] Moore, 'The Syphilis-General Paralysis Question', p.268.
[44] Ford Robertson was involved in a similar failed venture in his career, relating to his work on carcinogenesis, in the first decade of the twentieth century. In collaboration with Henry Wade, he directed a search for an infective cause of cancer, using a similar staining technique to that used in GPI brains. See, for example, W. Ford Robertson and H. Wade, 'Cancer and Plasmodiaphorae', *Lancet*, 2 (1904), 469; Editorial, 'The Etiology of Carcinoma', *Lancet*, 1 (1905), 244-245. As Ford Robertson had done for the toxin theory of GPI, he advanced bold claims, many of which he was later

In fact, even for those who supported the toxin findings, this new theory of causation was not meant to replace alternative theories. Alienists seemed to cling tenaciously to many causal pathways despite their organic aspirations, making clear the fact that this toxin theory could merely supplement previous theories. Clouston had announced in 1906 that in consequence of certain discoveries by Ford Robertson and McRae, he had been converted to the belief that GPI was caused by a microbe acting on brains previously weakened by dissipation and alcoholic poisoning. However, he added:

> All one can say is that even if a microbe is shown to be immediately responsible for general paralysis, it is not, in the terms of the case, the original cause. If we can get rid of that physical degeneration which has its origin chiefly in the vicious degraded life of the slums, there is not likely to be much work for the microbe. And merely to circumvent the microbe – if we were able to do that – without putting an end to the physical degeneration, it is not easy to see that civilisation would benefit very much.[45]

Similarly, George Robertson 'did not wish anyone to go off with the idea that he believed that organism to be the cause of general paralysis of the insane'.[46] In fact, Ford Robertson himself sought, in frequent discussions in the *Journal of Mental Science* following his presentations, to deny the point alleged by a number of speakers that he attached little or no importance to syphilis in the aetiology of GPI. On the contrary, he maintained that syphilis was by far the most important aetiological factor. He only wished to make clear that it was not an absolutely essential factor and to insist that there must be some other factor introduced to account for the phenomena of the disease.[47]

Apart from being integrated into the multiple causation approach, the toxin theory still allowed alienists to reaffirm their own social values, particularly the dangers of alcohol and promiscuity, and the general degenerating influence of the

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obliged to retract. Wade moved into a parallel, but less controversial, area of cancer research, while Ford Robertson continued alone. See D. Gardner, 'Henry Wade: Surgeon and Pioneer of Cancer Research', Personal Communication (forthcoming).

[45] 'Insanity and Degeneration', *Royal Edinburgh Asylum Presscuttings Book*, volume 6, 27 February 1906, LHB7/12/6, p.76/20.

[46] 'Discussion', p.609.

[47] Ford Robertson, 'Discussion on the Pathology', p.1069.

city. It allowed them to diagnose and pathologise society. Alienists were necessarily reliant on their existing framework of knowledge, having to fit newer theories into this, and perhaps choosing to reject those theories which simply did not fit their framework. As the theory of toxic poisons began to be investigated and proven by various scientists and, just as importantly, as it was compatible with previous theories, this aetiological factor was accepted by certain parties. However this factor was only accepted alongside those ideas already held about the causality of GPI, not as a replacement for them.

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